FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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TO OUR READERS.

The Supply of "FLIGHT." Important Notice.

Order "FLIGHT" to be either delivered or reserved for you regularly.

As the demand for "FLIGHT" is so great each week, it is of the utmost importance that readers should place their orders *firmly* for copies of "FLIGHT" at the bookstalls, their newsagents, or direct from the publishers, at 44, St. Martin's Lane, W.C., if they wish to secure a copy every week and avoid disappointment. The stringent Government restrictions in regard to the supply of printing paper necessitates this precaution in order that only actual numbers required are printed, and all wastage by unsold copies may thereby be reduced to a minimum, if not eliminated.

THE PUBLISHERS.

EDITORIAL COMMENT.



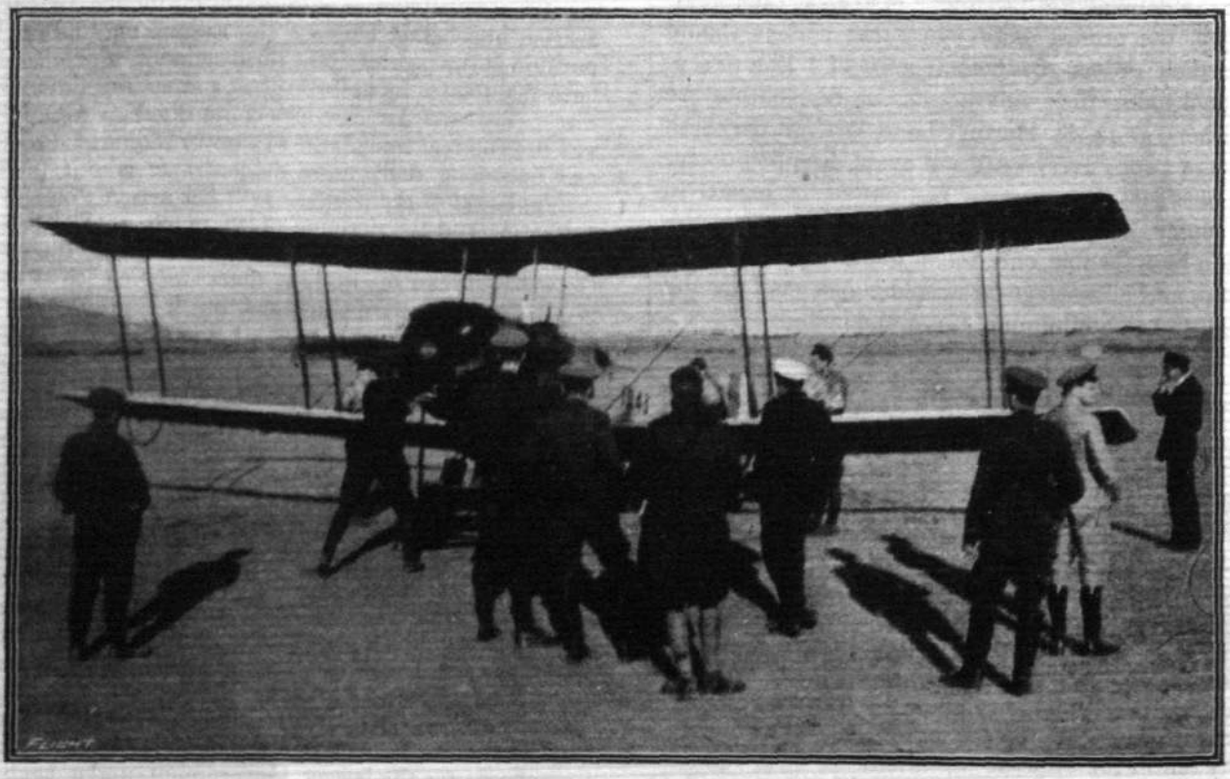
EVENTS of the air are moving rapidly towards a solution of the ever-expanding problem of ways and means, and largely this very much to be desired result is, we believe, due to the untiring and persistent efforts of Mr. Pemberton-Billing, who has, in his own way, having regard to the attention which has come to be directed upon the attainment of Supremacy in the Air, made his personality felt in the House.

It is a source for congratulation to the country and to the Aviation Industry that Mr. Billing, after his first outburst, has so greatly modified his tactics, and is thereby quickly re-gaining that hearing for the great cause, which he would never have endangered had he kept to his shoal of facts and reasoned policy. Incisive language and plain speaking we applaud whole-heartedly, and his speeches at various meetings round the country should arouse even still greater enthusiasm for forcing a great Air Service into being, whereby the Empire may attain that position of superiority in the third element, which has now been maintained by us for so great a stretch of time on the seas. That the Air Services Co-ordination Committee was not the real thing, and was never intended to be, is now becoming daily more evident. It is this political manipulation of the position as it has arisen which is the harrassing and the undoing of so much good intention. The controlling lawyer mind which sways the entire Government can see nothing derogatory in such attempts to get rid of awkward situations, but it is pretty clear that the people themselves are nigh being sick unto death of such shuffling methods, which lead nowhere except to confusion. That Lord Derby would sooner rather than later resign the chairmanship of the Committee we had no manner of doubt, and said so. His time is more than occupied already with the recruiting tangle, and much as we all have confidence in Lord Derby as a resourceful and tactful organiser, it was evident from the first that his occupation of the chair could be but of short duration. Not so Lord Montagu, however, who, in tendering his resignation as Assistant Chairman, must have very sound reasons for seeing the impossibility of continuing in a position, which apparently possessing unlimited scope for having a maximum of seeming responsibility, yet has not a vestige of power to create or re-order matters that may be going awry. To remain as a scapegoat for the lawyer Government under such conditions is hardly the attitude which Lord Montagu could

The Joint Air-Committee.

be expected to take up meekly. Consequently he has done the only reasonable thing under the conditions, and has also seceded from the Special Committee. At the time of writing nothing official has transpired as to the why and the wherefore of this conclusion to the promise of reform contained in the appointment of this body. On Wednesday of this week, Lord Montagu is to speak at Birmingham upon the air question, and it is to be hoped that he will then be able to throw such light upon the complications which are hindering the smooth working of the Committee, as to either make it clear that nothing short of the immediate creation of an Air Ministry will suffice, or force the Coalition Government to so widen the present Committee's powers as to make it a real reform body. It is persistently rumoured that the old trouble of the antipathy of the two Services to each other is at the bottom of all the friction. If that prove to be the case, to our mind no better evidence could be produced of the crying need for an entirely separate Air Ministry, and that without an unnecessary moment's delay. That accursed hereditary jealousy which has been handed down as a legacy from time immemorial, has been the cause of irreparable mischief in the past, and seems as if it were apparently irreducible. From time to time we have had gleams of hope that it was on the Air "platform" that this fetish of centuries might at last be sacrificed. But once again human nature seems to have come out on top, and the general welfare must take second place, lest the *amour propre* of one or other of the services may be slightly touched. That such pettiness can exist in connection with two such glorious services as the British Navy and Army is almost inconceivable. But it always has been upon a par with the mixing of oil and water, and it looks like remaining so. Under such conditions there appears to be but the one way out of the tangle, and that is by letting each of the great services still "carry on" as hitherto, with whatever they may wish for, and it is possible to supply them with, in the shape of aircraft.

Let there be created the much-required Ministry of Air, with the widest possible powers, this new department to work out a far-reaching and bold policy of offense and defense on its own, whilst providing for all supplies to each of the other Services, as each of the commands intimate the requirements necessary for a successful prosecution of their individual plans of campaign. With the Chairman and the Vice-Chairman of the Co-ordination Committee gone, the likelihood, under the circumstances, of the Admiralty and War Office representatives endeavouring at the same table to find a way out of the quandary would appear to be almost hopeless. The appointment of some new political Chairman, with a high-sounding title as his only qualification for the post, will assuredly not meet the case, and if this is attempted, in order to smother up the suppressed fire which is raging for drastic action in matters relating to the air, we can see in it but one more sign that before long the country will demand a clean sweep of the whole political clique of lawyers, who have clung to office far too long, and who to remain in power have ever had before them, in whatever steps they take, the one ultimate guiding aim and principle, the securing of votes when they hand in their tickets for re-election. When they have to put their proposal forward to the country for a "vote of confidence," we fancy they will find the element of the air is a pretty solid mass when it is consolidated by unity of purpose. And to demonstrate this we now have two very earnest advocates in Lord Montagu and Mr. Pemberton-Billing, backed by a number of lesser lights who hope to obtain a little reflected glory by supporting what is gradually dawning upon them as likely to develop into a star of the first magnitude, in the not far off future.



A two-seater Avro about to start for Suvla the day after the evacuation. On the pilot's return he reported that the Turks were still shelling the empty trenches for all they were worth.

FLIGHT

The British Air Services

"PER ARDUA AD ASTRA"

Under this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the London Gazette, *it is not repeated in this column.*

Royal Naval Air Service.

The following appeared among the Admiralty announcements the 3rd inst. :—

Temporary Sub-Lieut. (R.N.V.R.) W. H. Mulville, promoted to Lieutenant (temporary), with seniority of March 31st. T. V. Oddie, entered as Probationary Flight Sub-Lieutenant (temporary), with seniority of April 1st, and appointed to "President II," additional, for R.N.A.S. T. F. Legard, granted a temporary commission as Assistant Paymaster (R.N.V.R.), with seniority of March 28th.

The following appeared in a supplement to the *London Gazette* issued on the 3rd inst. :—

Machine-Gun Corps.—Lieutenants (R.N.V.R.), from Royal Naval Air Service, to be Temporary Majors: A. G. Stern; March 6th, 1916. D. G. Wilson; March 7th, 1916.

Officers (R.N.V.R.), from Royal Naval Air Service, to be Temporary Captains: Lieut. K. P. Symes; March 8th, 1916. Lieut.-Commander A. D. Borton (Lieutenant, Reserve of Officers, King's R.R.C.); March 27th, 1916. Temporary Capt. F. Summers, D.S.O. (Royal Marines); March 28th, 1916.

The following appeared among the Admiralty announcements of of the 4th inst. :—

Flight-Commander F. K. Haskins granted the acting rank of Squadron-Commander, with seniority of March 31st.

Flight-Lieuts. R. H. Mulock and G. H. Beard both granted the acting rank of Flight-Commander, with seniority of March 31st.

The undermentioned have been entered as Probationary Flight Sub-Lieutenants (temporary), with seniority of April 3rd, and all appointed to "President," additional, for R.N.A.S.: H. F. Parker, A. O. K. Wright, R. Maxwell, E. P. M. Davis, L. W. Ormerod, W. G. R. Hinchcliffe, E. B. J. Walter, A. J. Enstone, I. M. Fry, A. F. Brandon, R. N. Brain, and T. F. B. Howe.

The following appeared among the Admiralty announcements of the 5th inst. :—

Flight-Commander I. H. W. S. Dalrymple-Clark promoted to the rank of Acting Squadron-Commander, with seniority April 1st.

Lieut.-Commander K. G. Brooke to "President," for R.N.A.S. To date April 3rd.

Lieuts. (R.N.V.R.) W. W. Hood and W. A. Dye promoted to the rank of Lieutenant-Commander (R.N.V.R.), both with seniority April 3rd.

Sub-Lieuts. (R.N.V.R.) J. E. Arrol-Hunter and W. N. Lucas-Shadwell promoted to the rank of Lieutenant, both with seniority April 3rd.

G. S. Adams entered as Warrant Officer, 2nd Grade, with seniority April 4th.

The following appeared among the Admiralty announcements of the 7th inst. :—

Major (R.M.L.I.) E. S. Mairis to "President," additional, for R.N.A.S. To date April 5th.

Probationary Flight Sub-Lieuts. J. Ree and R. E. Green granted temporary commissions as Sub-Lieutenants (R.N.V.R.), and appointed to "President," for R.N.A.S. To date April 6th.

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, to date as stated: H. R. Brenton, Feb. 24th; P. O. Gadbois, A. Y. Wilks, and M. C. Dubuc, Feb. 29th.

Royal Flying Corps (Military Wing).

The following appeared in a supplement to the *London Gazette* issued on the 3rd inst. :—

Squadron-Commander.—Capt. F. C. Jenkins, Special Reserve, from a Flight-Commander, and to be Temporary Major whilst so employed; Feb. 20th, 1916.

Flying Officers.—Lieut. P. A. O. Leask, Royal Irish Rifles, and to be seconded; March 8th, 1916. March 9th, 1916: Temporary Lieut. D. Wilson, E. Yorks R., and to be transferred to the General List. Lieut. C. H. Nicholas, S. Wales Bords., Special Reserve, and to be seconded. Second Lieut. D. H. Dabbs, Berks (Hungerford) Yeomanry; Temporary Second Lieut. C. A. Mercer, Queen's (Royal West Surrey R.), and to be transferred to the General List; March 16th, 1916.

The following appeared in the *London Gazette* of the 4th inst. :—

Flying Officers.—March 16th, 1916: Temporary Second Lieut. D. W. Clappen, General List; Second Lieut. J. H. Firstbrook, Special Reserve. March 21st, 1916: Capt. W. A. S. Rough, Bedfordshire Regt. (Special Reserve); Second Lieut. (Temporary Capt.) G. Aste, A.S.C., Special Reserve, and to relinquish his temporary rank; Lieut. J. S. Scott, Canadian Field Artillery; Temporary Lieut. S. W. Thompson, Royal Scots Fusiliers, and to be transferred to the General List; Second Lieut. B. P. G. Hunt, Shropshire Yeomanry (T.F.); Second Lieut. S. B. Lee, Special Reserve; Second Lieut. P. Huskinson, Sherwood Foresters (Nottinghamshire and Derbyshire Regt.), and to be seconded; Second Lieut. R. W. Le Gallais, Special Reserve.

Flying Officer (Observer).—Second Lieut. W. O. Raikes, Buffs (East Kent Regt.), Special Reserve, and to be seconded; Oct. 21st, 1915.

Assistant Equipment Officer.—Second Lieut. E. Cooke, Special Reserve; March 21st, 1916.

Memoranda.—Major-General Sir David Henderson, K.C.B., D.S.O., to be Temporary Lieutenant-General; March, 24th, 1916.

Brevet Col. (Temporary Brigadier-General) Hugh M. Trenchard, C.B., D.S.O., Royal Scots Fusiliers, Aide-de-Camp to the King, to be Temporary Major-General; March, 24th, 1916.

Pte. Charles H. Davies, from London R. (T.F.), to be Temporary Second Lieutenant for duty with the R.F.C.; Jan. 22nd, 1916.

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: Reginald W. Le Gallais, Edmund Cooke, and Stanley B. Lee.

To be Second Lieutenants (on probation): William J. Sinclair; March 6th, 1916. Charles P. V. Roche; March 18th, 1916.

The following appeared in a supplement to the *London Gazette* issued on the 5th inst. :—

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: A. C. Ferguson, M. H. Thunder, J. L. Finney, and G. I. Taylor.

The following appeared in a supplement to the *London Gazette* issued on the 6th inst. :—

Memoranda.—To be Temporary Second Lieutenants: Pte. Noël Aston Ayres, from A.S.C., for duty with the Royal Flying Corps; March 13th, 1916. 1st Class Air-Mechanic Leslie Murden Page, from Royal Flying Corps, for duty with the Military Wing of that Corps; March 24th, 1916.

Supplementary to Regular Corps.—James H. Banks to be Second Lieutenant (on probation); March 13th, 1916.

Adjutant-General's and Quartermaster-General's Staff.

Deputy-Adjutant and Quartermaster-General.—Major (Temporary Lieut.-Col.) Henry R. M. Brooke-Popham, D.S.O., Oxfordshire and Buckinghamshire L.I., from a General Staff Officer, 1st Grade, and to be Temporary Brigadier-General whilst so employed; March 12th, 1916.

The following appeared in the *London Gazette* of the 7th inst. :—

Wing-Commanders from Squadron-Commanders, and to be Temporary Lieut.-Cols. whilst so employed.—Maj. A. G. Board, South Wales Bord.; March 19th. Capt. (Temporary Major) F. V. Holt, D.S.O., Ox. and Bucks L.I.; March 20th.

Flight-Commanders from Flying Officers (and to be Temporary Captains whilst so employed).—Lieut. G. D. Hill, 7th Hussars; March 20th. March 24th: Second Lieuts., S.R., W. P. Cort, H. Tomlinson, A. T. Harris.

The following appeared in a supplement to the *London Gazette* issued on the 8th inst. :—

Flying Officers (Observers).—March 24th, 1916: Temporary Capt. P. A. Kirkup, Durham L.I. (T.F.); Second Lieut. F. G. Russell, R.F.A., Special Reserve. March 25th, 1916: Lieut. W. D. Budgen, Prince of Wales's Leinster R. (Royal Canadians), and to be seconded; Temporary Lieut. J. H. Truscott, Devon R., and to be transferred to the General List; Temporary Second Lieut. C. H. M. King, R.G.A., and to be transferred to the General List.

Wing-Adjutant.—Temporary Capt. F. R. Hedges, Suffolk R., and to be transferred to the General List; March 21st, 1916.

Assistant Equipment Officers.—Temporary Second Lieut. J. W. Burt, General List; March 28th, 1916.

Memoranda.—To be Temporary Second Lieutenants: Pte. Basil J. Mitchell, from R.A.M.C. (T.F.), for duty with the Royal Flying Corps, Feb. 21st, 1916; 1st Class Air-Mechanic Lindop E. Brown, from Royal Flying Corp, for duty with the Military Wing of that Corps, March 22nd, 1916.

Supplementary to Regular Corps.—Second Lieut. (on probation) John K. Aird is confirmed in his rank.

The following appeared in a supplement to the *London Gazette* issued on the 10th inst. :—

Squadron-Commanders, from Flight-Commanders, and to be Temporary Majors whilst so employed.—March 27th, 1916: Capt. Charles R. S. Bradley, 4th Cavalry, Indian Army; Capt. John A. Chamier, 33rd Punjabis, Indian Army.

Flying Officers.—March 23rd, 1916: Second Lieuts. J. K. Aird, A. C. Ferguson, and M. H. Thunder, Special Reserve; Lieut. H. Clements Finnerty, 17th (Duke of Cambridge's Own) Lancers, from a Flying Officer (Observer).

Flying Officers (Observers).—Oct. 21st, 1915: Brevet-Major A. J. Ross, R.E.; Capt. E. H. M. O'Farrell, Princess Victoria's (Royal Irish Fus.), and to remain seconded. March 21st, 1916: Capt. I. De la Bere, Dorset R., and to be seconded; Temporary Second Lieut. V. G. A. Bush, Highland L.I., and to be transferred to the General List; Second Lieut. J. Milner, Durham L.I., Special Reserve; Temporary Second Lieut. F. G. Wilson, Royal Fus. (City of London R.), and to be transferred to the General List; Temporary Second Lieut. H. L. Wallis, R.A., and to be transferred to the General List.

Balloon Officers.—Temporary Second Lieut. H. O. Hope, K.R.R.C., and to be transferred to the General List; March 6th, 1916. Temporary Lieut. O. H. Weekes, A.S.C.; Temporary Second Lieut. G. T. Dunstan, Queen's (Royal W. Surrey R.), and to be transferred to the General List; Temporary Second Lieut. G. A. N. Mitchell, Royal Fus. (City of London R.); March 11th, 1916. Capt. D. Rainsford Hannay, 53rd Sikhs (Frontier Force), Indian Army; March 20th, 1916.

Assistant Equipment Officers.—Temporary Lieut. A. C. Bishop, Berks (Hungerford) Yeomanry (T.F.); March 23rd, 1916. Temporary Second Lieut. H. M. Bentley, General List; March 26th, 1916. Second Lieut. J. L. Finney, Special Reserve; March 27th, 1916. Temporary Second Lieuts. H. T. Birdsall and B. J. Mitchell, General List; March 28th, 1916.

Supplementary to Regular Corps.—Capt. Edward K. Davies resigns his commission; April 11th, 1916.

Royal Flying Corps (Territorial Force).

THE following appeared in a supplement to the *London Gazette* issued on the 22nd ult. :—

Hampshire Aircraft Parks.—Second Lieut. Algernon H. Lister, to be Temporary Lieutenant; March 1st, 1916.

The following appeared in the *London Gazette* of the 7th inst. :—

Hampshire Aircraft Parks.—J. H. Glover to be Second Lieutenant; April 8th.

The following appeared in a supplement to the *London Gazette* issued on the 8th inst. :—

Hampshire Aircraft Parks, R.F.C.—Second Lieut. W. Laidler, Durham L.I., to be Second Lieutenant, April 9th.

THE R.F.C. IN MESOPOTAMIA.

IN the despatch from General Sir John Nixon, K.C.B., covering the operations in Mesopotamia from Mid-April to the end of September, 1915, and published in the *London Gazette* on the 5th inst., there are the following references to air work :—

"13. An aeroplane reconnaissance on the morning of June 1st discovered that the enemy had evacuated his main position, and was in full retreat up the Tigris.

"31. I have to place on record the excellence of the work performed by the officers and men of the Royal Flying Corps, whose valuable reconnaissances materially assisted in clearing up the situation before the battle of July 24th."

Writing of the situation at Sannaiyat on September 25th, Sir John Nixon says :—

"36. A few skirmishes had taken place between our cavalry and that of the enemy, and constant naval and air reconnaissances were made. Accurate information was gained regarding the dispositions of the enemy. The work performed by the Royal Flying Corps during this period was invaluable."

Writing of the battle of Kut-el-Amara, he says :—

"57. The services of the Royal Flying Corps, not only during the battle but also in the frequent reconnaissances which preceded the fighting, also call for notice. The flying officers displayed courage and devotion in the performance of their duties, which were often carried out under a heavy fire. The accurate information obtained during air reconnaissances was of the utmost value in planning the defeat of the enemy, and the remarkable skill and powers of observation displayed by Flight-Commander Major H. L. Reilly, Royal Flying Corps, contributed in no small degree to the success of the operations."

In the list of British officers recommended for distinguished service are the following :—

"Operations Amara, May 31st to June 4th :

"*Royal Flying Corps.*—Major P. W. L. Broke-Smith, Lieut. W. W. A. Burn (since killed), Capt. H. Petre and Major H. L. Reilly.

"Euphrates operations, June 26th to July 25th :

"*Royal Flying Corps.*—Capt. B. S. Atkins, 11th Rajputs (attached), Lieut. W. W. A. Burn (since killed), Lieut. G. F. Merz (since killed), Capt. W. G. Palmer, 113th Inf. (attached), Major H. L. Reilly and Lieut. T. R. Wells.

"Operations Kut-el-Amara, September 28th :

"*Royal Naval Air Service.*—Lieut. V. G. Blackburn and Major R. Gordon.

"*Royal Flying Corps.*—Lieut. E. J. Fulton, Capt. H. Petre, Major H. L. Reilly, and Capt. F. C. C. Yeats-Brown (17th Cav.) attached."

⊛ ⊛

D.S.O. for Flight-Commander Bone.

IT was notified in the *London Gazette* of the 7th inst. that the King had been graciously pleased to give orders for the appointment of the undermentioned officer to be Companion of the Distinguished Service Order :—

Lieutenant REGINALD JOHN BONE, R.N., Flight-Commander, R.N.A.S.

In recognition of his services on March 19th, 1916, when, flying a land machine, and unaccompanied by an observer, he chased out to sea, and after bold and skilful manœuvring, disabled and brought down by gunfire a German seaplane, which had been engaged in a raid on the coast of Kent.

Details of Flight-Commander Bone's Exploit.

FURTHER details of Flight-Commander Bone's successful attack on one of the German raiders on March 19th are given in the following, which was issued by the Press Bureau on April 7th :—

"The following is a fuller report of the exploit of Flight-Commander R. J. Bone, R.N., who has been awarded the D.S.O. for gallantry in pursuing a hostile seaplane over 30 miles out to sea and forcing it to action, in spite of the fact that he himself was in a small land machine.

"Flight-Commander Bone left the aerodrome while the enemy machine was still in sight, and, making no attempt to climb his machine steeply, concentrated on keeping the enemy in sight. After pursuing for nearly 30 miles, the superior climb of his machine enabled him to attain a positition at 9,000 ft., 2,000 ft. above the enemy. From this position, by flying level or slightly nose down, he rapidly overhauled the enemy and endeavoured to make a vertical dive on to him, firing his machine gun. The enemy replied vigorously. Flight-Commander Bone then manœuvred to get ahead of the hostile machine, and, having succeeded, steered straight at him, diving so as to pass below him and turning with a vertical right-hand bank almost immediately under him. The German pilot turned his machine away a little to the left before they met, and the observer was visible hanging over the right-hand side of the *fuselage*, apparently dead or severely wounded. The gun was cocked up at 45 deg. to the vertical. Flight-Commander Bone's speed carried him up to within 15 ft. to 20 ft. of the enemy machine, and he had no difficulty in keeping his sights on, firing four or five bursts of about six rounds until the enemy dived steeply with smoke pouring out of his engine. The propeller stopped in a vertical position, but the machine was under control and succeeded in landing safely.

"The fight was over at 2.50 p.m., and as Flight-Commander Bone was powerless to do anything while the enemy remained on the water, and as his engine showed signs of giving out, he returned to give information.

"Flight-Commander Bone has distinguished himself on previous occasions in France."

Italian Honour for Lord E. Grosvenor.

FOR services rendered to the Italian Navy and Army flying services in August of last year, Flight Commander Lord Edward Grosvenor has been decorated by the Italian Government.

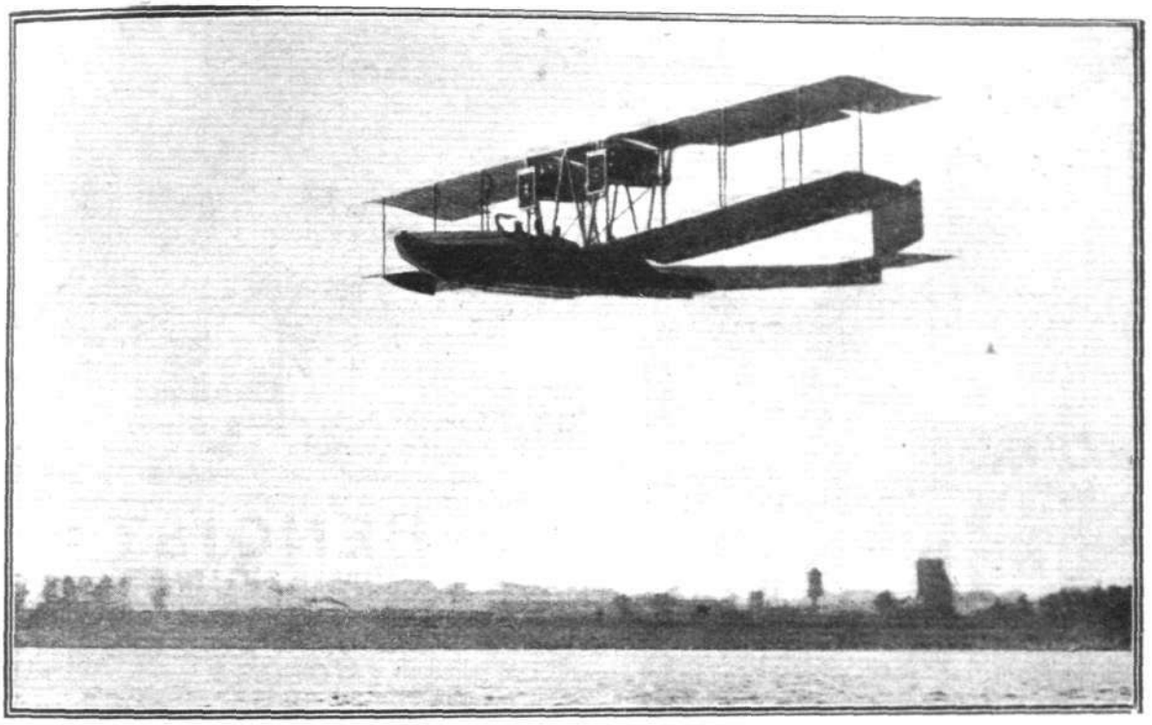
FLIGHT

THE BENOIST FLYING BOAT.

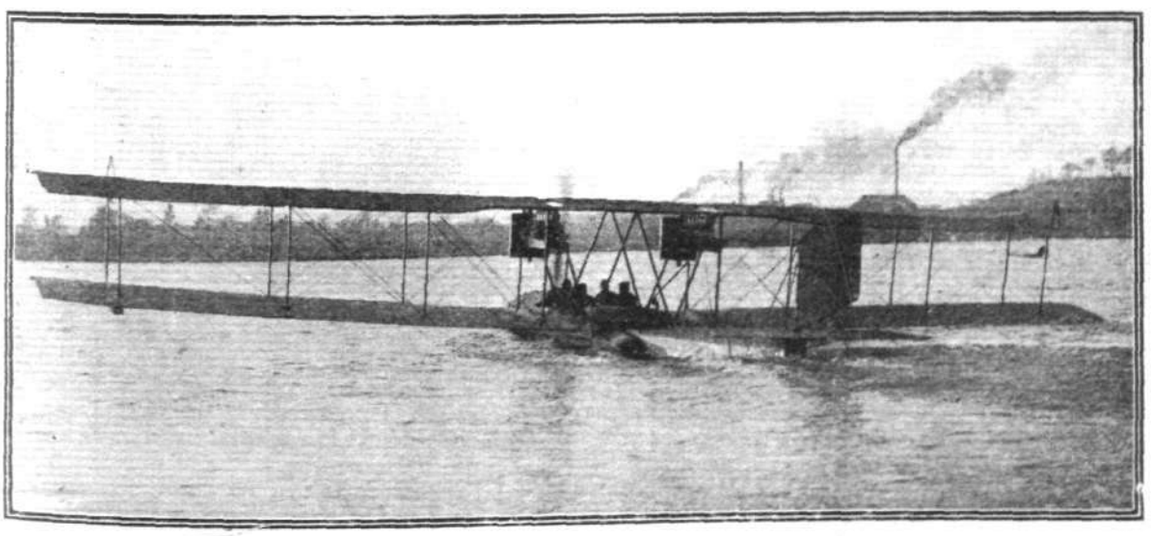
MODEL "C" TWIN-ENGINED.

So successful has been the passenger air service between St. Petersburg and Tampa, Fla. (about 20 miles), which was inaugurated on January 1st, 1914, by the Benoist Aeroplane Co., that it has been found necessary to design a 'bus capable of carrying a larger number of passengers than did the standard Benoist flying boats originally used. Hence the large twin-engined flying boat, shown in the accompanying illustrations and scale drawings, and it must be admitted that its designer, Tom W. Benoist, has succeeded in producing a decidedly interesting machine of a type that is bristling with "knotty" problems. He has, furthermore, met with results in actual practice that have been extremely encouraging.

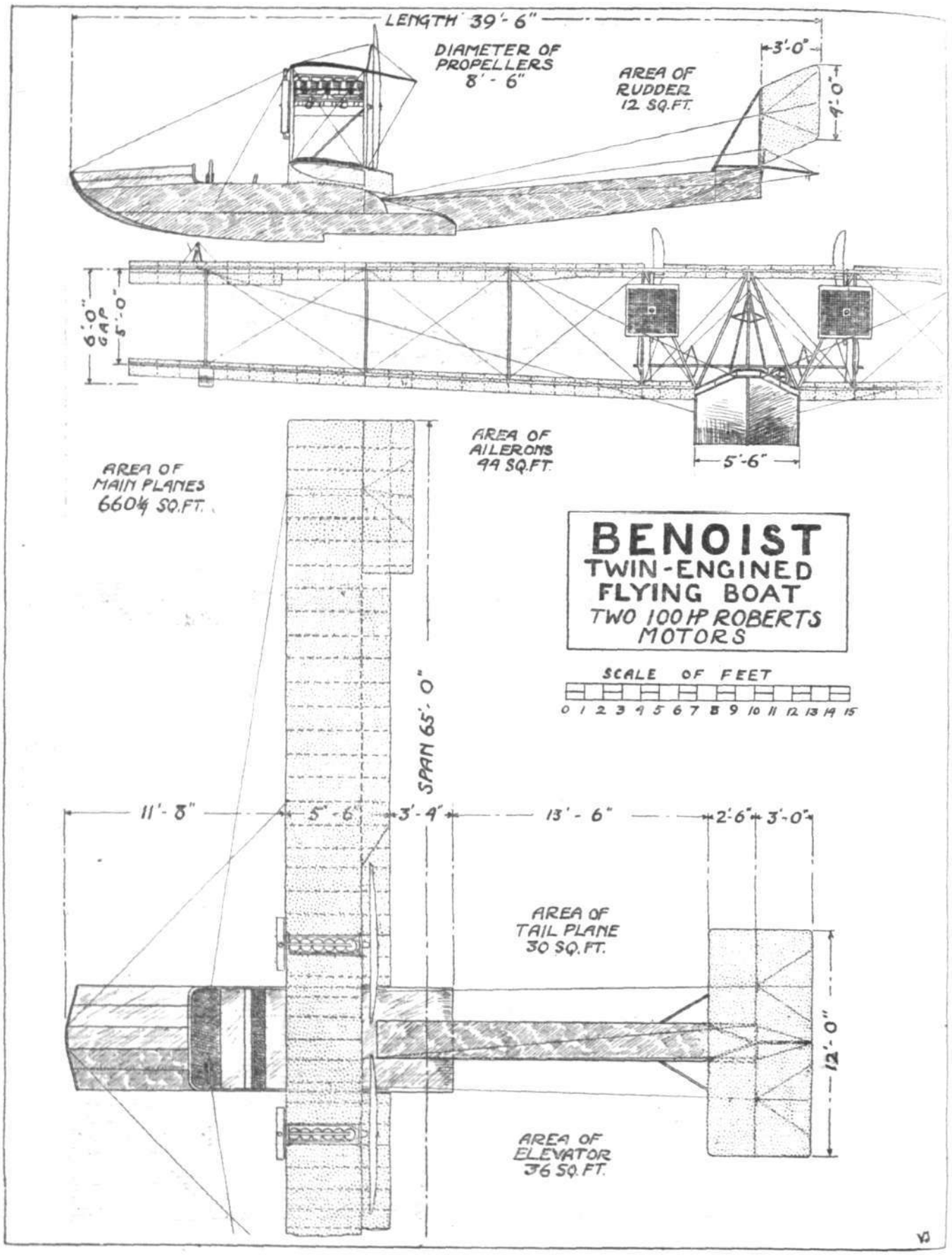
In the design and construction of the model "C" flying boat the usual Benoist practice obtains almost throughout, the only departures being those necessitated by the peculiarities of twin-engine design and the large size of the machine. For instance, the power plant, which in this case consists of two 100 h.p. Roberts motors, is not located in the hull, as has always been a feature of previous models, but is arranged between the top and bottom planes. The boat is of the short hull type, as in previous Benoist models, though somewhat modified, the "business" portion of the boat finishing just aft of the main planes, the remainder of the boat merely serving to carry the tail. The length of the boat proper is 20 ft. 6 ins., and the beam is 5 ft. 6 ins, whilst



The model "C" Benoist twin-engined flying boat in flight.



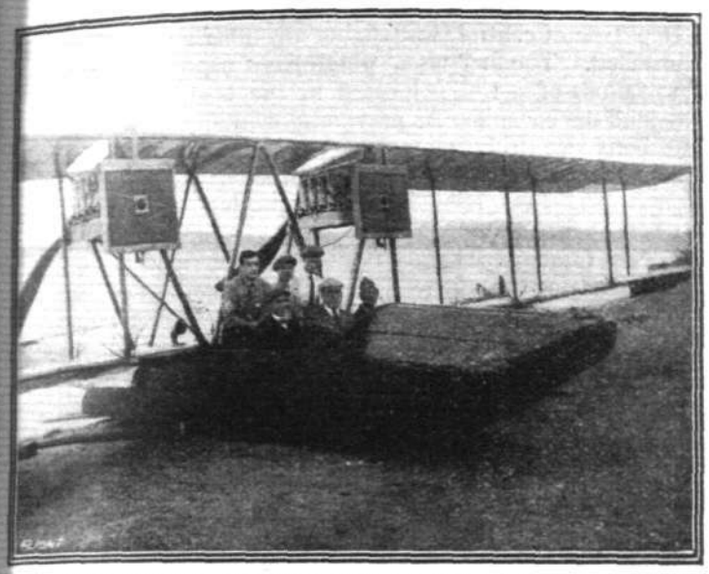
Three-quarter rear view of the model "C" Benoist twin-engined flying boat.



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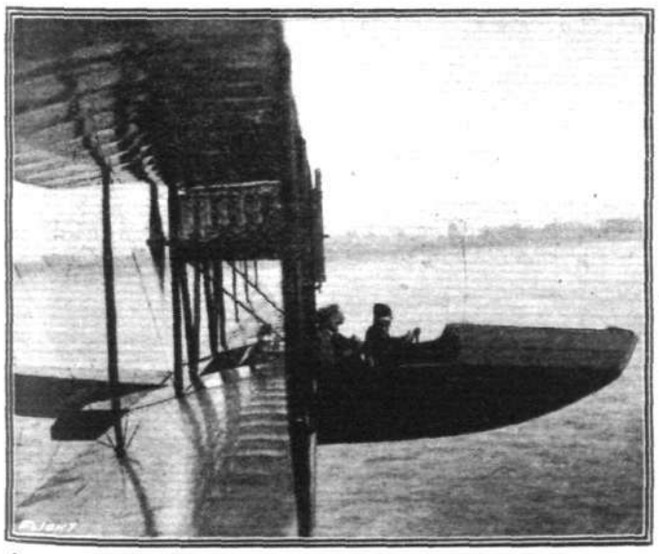
THE MODEL "C" BENOIST TWIN-ENGINED FLYING BOAT.—Plan, side and front elevation to scale.

the maximum depth of the hull is 3 ft. The step is located 13 ft. 6 ins. from the nose, being rather further back than is usually found in other designs of flying boats, *viz.*, at the c.g. of the machine. From the stern up to a point about 7 ft. from the nose the bottom is flat, after which it is slightly V-shaped laterally and curved upwards



View showing the boat and engines of the model "C" Benoist flying boat.

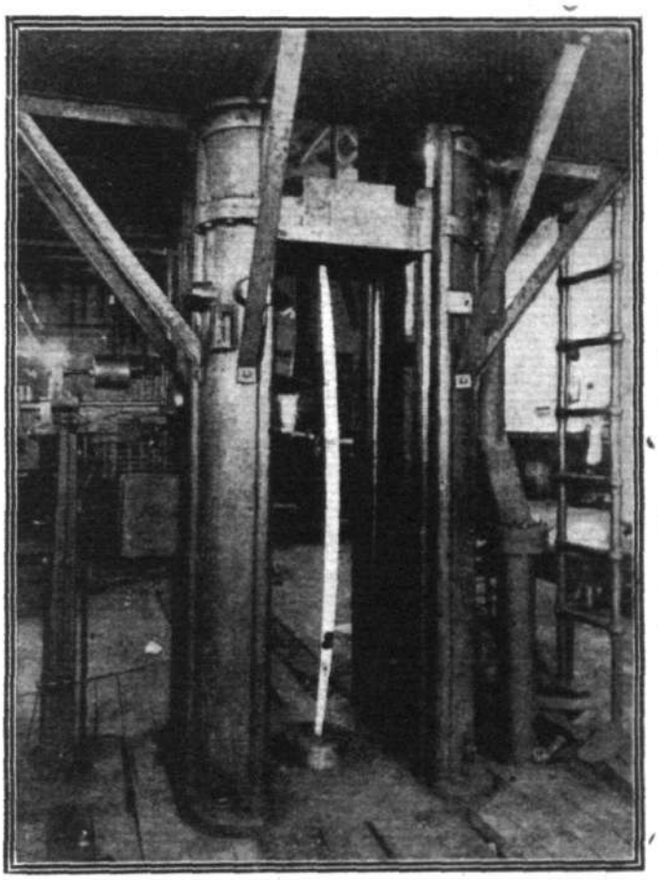
From the nose to the cockpit is an inverted V deck. The cockpit is very roomy, measuring 5 ft. fore and aft, and seating six persons—three, including the pilot, in front and three behind. The latter seats are immediately in front of the main planes, so that all the occupants have an excellent view in all directions. The hull is built up in the usual way of first-grade clear mahogany, the sides being $\frac{3}{8}$ of an inch thick, and the bottom consisting of two layers of the same thickness, except for the last five feet at the stern, which is made up of a single layer. The rear portion of the boat carrying the tail planes is to all intents and purposes a *fuselage* of rectangular section attached to the stern of the boat proper and sloping upwards. It is built up of four longitudinals and six sets



A passenger on the new Benoist flying boat takes a photo. of the cockpit and its occupants whilst in flight.

of cross members, the whole being wire-braced and covered with fabric.

The main planes, which have a span, top and bottom, of 65 ft., are a development of those employed on preceding models, modified as to camber and construction to meet the special requirements of a machine of this type. They are made up of five sections as follows: A centre section 11 ft. span rigidly attached to the boat and carrying the two engines. Attached to the centre section are inner extensions measuring 14 ft. 6 ins., and to these are attached the outer extensions of 12 ft. 6 ins. In the centre section and the inner extensions the main spars are of spruce, with a cross section of 2 by $2\frac{1}{2}$ ins., and in the outer extensions they have a cross section of 2 by $1\frac{1}{2}$ ins. A "V" arrangement is employed for the interplane struts in the centre or boat section, which has the advantage not only of being extremely strong and rigid, but the absence of bracing wires between the two pairs of innermost struts allows a clear passage from the cockpit to the stern of the boat and to the engines, which can thus be inspected with the greatest facility. This arrange-



Testing one of the struts of the model "C" Benoist flying boat. All the various component parts of the Benoist machines are thoroughly tested before being finally adopted as standard.

ment also provides exceedingly strong and simple mounting for the engines, the cross pieces of the "A's" formed by each of the two outer pairs of centre section struts carrying the stout engine bearers. In front of each engine is mounted a square radiator through which projects an extension of the crankshaft for receiving the crank-handles for starting the engines. From the centre section outwards top and bottom planes are separated by four pairs of stout streamlined struts having a factor of safety of about eight or ten. The lower plane is set at a dihedral angle, the gap being 6 ft. at the centre and 5 ft. at the wing tips. This not only makes for stability, but enables the lower wing tips to be kept as far as possible out of the water, which is a matter of some importance with big span machines. Bracing is by Roebling 19-strand cable, the positive or carrying wires of the inner box section being $\frac{5}{16}$ in. doubled and $\frac{5}{16}$ in. single for

the outer box sections. A neat method of attaching the cables to the turnbuckles, anchors, &c., is employed. Small brass ferrules are slipped over the cables when turned back to make the loop and soldered in place. The end of the cable opposite the turnbuckle is looped but not soldered or fastened permanently in the eyelet of the fitting, and the latter is provided with a small bolt which can be withdrawn by removing a cotter pin, it being thereby possible to make up all the cables on the bench and attach them in an instant, as well as to carry a supply of spare cables on board. All the wing fittings are made of sheet steel stampings spot welded where necessary, and the planes are covered with strong unbleached Irish linen treated with five coats of special Benoist dope and finished with two coats of Valspar.

Ailerons are hinged to the rear spar extremities of the top plane only, and floats are mounted under the lower plane just below the extreme outer inter-plane struts. A Dep. type of control is fitted, but any other system can be installed. The fuel tank, which has a capacity of about 30 gallons of petrol, is located in the boat immediately behind the cockpit. As previously mentioned, two 6-cyl. Roberts two-stroke motors of 100 h.p. each are fitted, being coupled direct to 8 ft. 6 in. diameter by 5 ft. 6 in. pitch propellers revolving in opposite directions at 1,100 r.p.m.

The principal characteristics of the model "C" Benoist flying boat are:—Span, 65 ft.; Chord, 5 ft. 6 ins.; gap, 6 ft. to 5 ft.; supporting area, 660¼ sq. ft.; weight empty, 2,400 lbs.; useful load, 1,300 lbs.; speed range, 40-60 m.p.h.; climbing speed, 500 ft. per min.

The Benoist machines have now acquired considerable interest for us in this country, as Messrs. R. F. Wells and Co., of 10, Elystan Street, Chelsea, have recently arranged for the British agency and to build them under licence.

THE "X" AIRCRAFT RAIDS.

IN view of the decision of the Government not to allow details of places visited by enemy aircraft to be published, we are, as before, giving to each one an index number. Eventually, when details are available, we shall give the respective information under these index numbers, which will facilitate easy reference to each particular raid.

The following announcements have been officially issued, the date after the index number indicating when the raid occurred:—

"X 29" Raid, April 5th.

"*War Office, April 6th, 2.50 a.m.*

"A Zeppelin attacked the North-East Coast about 9.50 p.m. last night, and was driven off by the fire of the anti-aircraft defence.

"Some bombs were dropped, but no information has yet been received as to casualties or damage."

"*War Office, April 6th, 4.10.*

"The air-raid of last night on the North-Eastern Counties was apparently carried out by three Zeppelins.

"The first one made an attack about 9.10 p.m., but was driven off by the fire of anti-aircraft guns after dropping five bombs which caused no damage or casualties. Numerous observers state that this Zeppelin was struck by gun-fire.

"A second raider made his appearance in another locality about 10.15 p.m., and though he was in the neighbourhood for some time no bombs were dropped. Another raider delivered an attack in a third locality during the night, but although several bombs were dropped only slight material damage was caused.

"The total number of bombs dropped was 24 explosive and 24 incendiary, and the casualties at present reported are:—

	Men.	Women.	Children.	Total.
Killed ...	—	—	1	1
Injured ...	2	1	5	8

"No military damage was caused."

German Version.

"*Berlin, April 6th.*

"Naval airships on the night of April 5th–6th destroyed large ironworks near Whitby and extensive buildings with blast furnaces, after previously pelting with explosive bombs and placing out of action a battery north of Hull. Furthermore, the factories of Leeds and the environs, and a number of railway stations in the industrial district, were attacked. Very good effects were observed. The airships were heavily bombarded. All landed undamaged.

"(Signed) CHIEF OF THE ADMIRALTY STAFF OF THE NAVY."

We are officially informed that the above is absolutely inaccurate, the object of the Germans being to obscure their failure by a tissue of lies.

Other Raid Items.

It seems that the bombs were dropped at one place obviously to enable the Zeppelin to increase its altitude owing to its lively reception.

Immediately the Zeppelin came within range it was picked up by the searchlights and the gunners were in great form.

One bomb fell through a cottage to the basement, but the four occupants in the house escaped.

At one spot on the North East Coast, the airship seemed to drop 200 feet on being struck by a shell.

Twenty bombs—13 explosive and 7 incendiary—fell in an area half a mile square—mostly in a field.

The nine year old boy—the only victim killed—was in bed when a bomb dropped through the roof.

THE ROLL OF HONOUR.

THE Secretary of the Admiralty announces the following casualties:—

Under date April 3rd: **Injured.**

Flight-Lieutenant Harold G. Henley, R.N.

Naval Details with Expeditionary Force.

Killed.

Kite Balloon Section, R.N.A.S.—F. 4493 F. Biddlecombe.

Slightly Wounded.

R.M.A. Anti-Aircraft Brigade.—486 (S.) J. Britnell, R.M.A.

The following casualties have been announced by the War Office:—

Wounded.

Captain J. T. Powell-Whittaker, A.S.C. and R.F.C.
Captain D. C. Ware, King's (Liverpool) Regt. and R.F.C.
Second Lieutenant H. P. Bramwell, Argyle and Sutherland Highrs., attached R.F.C.
2883 1st Class Air-Mechanic G. Greenwood, Royal Flying Corps.

Missing.

Second Lieutenant H. G. Frost, Suffolk Regt., attached R.F.C.
Second Lieutenant F. N. Grimwade, Royal Flying Corps.
Second Lieutenant J. S. Castle, Royal Flying Corps.

Officially reported Missing, and Unofficially reported Killed.

Second Lieutenant G. J. L. Welsford, Middlesex Regt. and R.F.C.

Officially reported Missing, and Unofficially reported Wounded and Prisoners of War.

Second Lieutenant F. G. Pinder, Royal Flying Corps.
Second Lieutenant T. C. Wilson, Royal Flying Corps.

Officially reported Missing, and Unofficially reported Prisoners of War.

Second Lieutenant E. A. Halford, Wilts Regt., attached R.F.C.
Lieutenant W. Joyce, Bedford Regt., attached R.F.C.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

SPECIAL COMMITTEE MEETING.

A Special Meeting of The Committee was held on Tuesday, the 11th inst., when there were present: Prof. A. K. Huntington, in the Chair, Mr. Ernest C. Bucknall, Mr. T. O. M. Sopwith, and the Assistant Secretary.

Election of **Chairman.**—On the motion of Mr. Ernest C. Bucknall, seconded by Mr. T. O. M. Sopwith, the Marquess of Tullibardine, M.V.O., D.S.O., M.P., was unanimously elected Chairman of the Club for the current year.

Election of **Vice-Chairmen.**—On the motion of Mr. Ernest C. Bucknall, seconded by Mr. T. O. M. Sopwith, Col. Sir Capel Holden, K.C.B., F.R.S., and Prof. A. K. Huntington were unanimously elected Vice-Chairmen for the current year.

Election of **Members.**—The following New Members were elected:—

Lieut.-Commander Percivale Barry, R.N.V.R.
Lieut. Claude Gordon Beatson, R.F.C. (S.R.).
Flight-Lieut. John Callaghan Brooke, R.N.
Lieut. George Caird, R.N.V.R.
Capt. Robert Colgate (32nd Royal Fusiliers).
Lieut. Ivo King Hervey Locke, R.N.V.R.
Jean Nicholas Thierry.

Extension of the Hours of Opening the Club.

The Club is now open from 9 a.m. to 10.30 p.m. each day, including Sunday.

THE FLYING SERVICES FUND
administered by
THE ROYAL AERO CLUB.

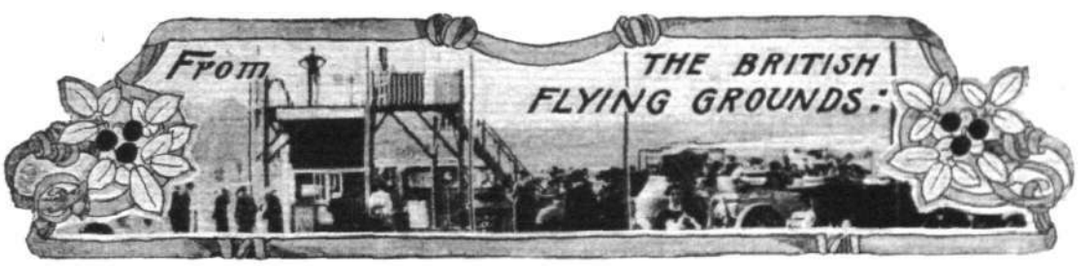
The Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers, and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.	£	s.	d.
Total subscriptions received to April 4th, 1916	10,601	9	11
Employés of Ruston, Proctor, and Co., Ltd. (Eighth contribution)	1	10	0
Staff and Workers of Gwynnes, Ltd. (Thirteenth contribution)	10	2	1
A Member of the Royal Flying Corps, South Farnborough	0	10	0
Total, April 12th, 1916	10,613	12	0

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.



London Aerodrome, Collindale Avenue, Hendon.

Grahame-White Civilian School. — Straights last week with instructor: Messrs. Sloden, Spencer, Matthews, Parkinson, Forster, Smith, Burrell, Mulville, Phillips, Rabourdin, Timmis and Nadin. Circuits with instructor: Messrs. Box, Williams F., and Scheidt. Eights with instructor: Messrs. Franck, Hathaway, Walk, Williams S., Henshaw, Kryn, and Leigh. Circuits alone: Messrs. Baragar, Eichelbrenner, Holman, and Sandys.

Brevets during week: Messrs. Grasset and Tanner.

Grahame-White School (R.N.A.S.).—Circuits with instructor: *Probationary Flight Sub-Lieut. Griffin.* Eights alone: Probationary Flight Sub-Lieut. McHardy.

Instructors: Messrs. Biard, Hale, Manton, Pashley, Russell and Winter.

Beatty School.—The following pupils were out during last week: *Messrs. Patterson, Parsons, Sellars, Jones, Liu,* Monhom, Chang, Nan, Fong, Cuthbert, Barrow, Murdoch, Sellars, Martin, Knox, Smith, Phillips, Tjaarda, Johnson, Brewerton, Stanley, Yam, Sing, Ching, Ping, Whitmore, Tow, Earl, Skeet and Dowding.

The instructors were Messrs. G. W. Beatty, W. Roche-Kelly, G. Virgilio, R. W. Kenworthy, L. L. King, A. E. Mitchell and H. Fawcett; the machines in use being Beatty-Wright dual-control and single-seater propeller biplanes and Caudron dual-control and single-seater propeller biplanes.

London and Provincial Aviation Co.—Pupils rolling last week: Messrs. Crawford and Evernden. Doing straights: Messrs. Archer, Hay, Rimer, Moore, Ferris, Houba, de Goussencourt, Dawson, Aldous and Pulford. Circuits: Messrs. Creaghan, Archer, Ferris, Jennings and Vilain XIIII.

Instructors: Messrs. W. T. Warren, M. G. Smiles, G. V. Aimer and W. T. Warren, jun.

Royal Aero Club certificate was taken by Mr. A. Jennings.

Ruffy-Baumann School.—Pupils with instructor last week: Messrs. Hoskyns, Winter, Edgar, Cuthbertson, Westlake, Williams and Williams, Maya, Torres, Portela, J. B. Thomas, jun., and Capt. Bailey. Straights or rolling alone: Messrs. Wood, Cox, Muspratt, Maya, Torres, Portela, and Baron D'Opstael. Eights or circuits alone: Baron D'Opstael.

Instructors: Messrs. Edouard Baumann, Felix Ruffy, Ami Baumann, Clarence Winchester and Andre Thomsen.

Machines in use: 50 and 60 h.p. Ruffy-Baumann tractor biplanes.

Certificate taken during the week by Second Lieut. A. W. Williams. *Vol plané* and eights excellent.



Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.

A batch of pilots who have obtained their Royal Aero Club certificates this year at the Hall School, Hendon.—Messrs. (1) J. Manley, (2) P. R. Stirling (who now holds a commission in the R.F.C.), (3) P. S. Butterworth, (4) W. H. Longton, (5) C. A. R. Shun, (6) C. B. Ridley, (7) L. W. Ormerod (now holding a commission in the R.N.A.S.), (8) G. Smith (now holding a commission in the R.F.C.), (9) R. S. Rattray.

Bournemouth School.

Pupils doing rolling last week: Messrs. O. Wilson, G. Mouton, Adamson, Kennedy and Barlow. Straights alone: Messrs. H. Smith, J. Wilson, Morley, W. Mouton and Morris. Half circuits alone: Messrs. Morley, Devos, Meeus and Dubois. Figures of eight: Mr. Bonnevie.

Instructors: Messrs. F. King and S. Summerfield.

Three Caudrons in use.

Very good ticket taken during week by Mr. Bonnevie.

The usual exhibition flights were carried out during the week by Messrs. King and S. Summerfield. Several Service machines paid visits towards the end of the week.

Poiree's New Records.

IT now appears that in his flights at Buc, referred to in our last issue, Poiree succeeded in beating five records. His mount was an all-metal Henri Farman, fitted with a Salmson engine. The figures, which have been passed by the Aero Club of France, are as follows:—

Pilot and six passengers	... ...	2,730 metres
Pilot and five passengers	... ...	3,000 ,,
Pilot and four passengers	... ...	4,060 ,,
Pilot and three passengers	... ...	3,940 ,,
Pilot and two passengers	... ...	4,500 ,,

The first three are world's records, while the other two are French records. The machine has a speed of 145 kiloms. an hour, and can climb 2,000 metres in 12 minutes, carrying a load of 400 kilogs. Poiree, who has been enjoying a few days' furlough in Paris, is returning to Russia, where he has been attached to the headquarters of the second army. His work in Russia has won for him the Orders of St. George and Vladimir and a sword of honour, while he has also been given the French Military Medal.

Lieutenant Guynemer in Hospital.

A MESSAGE from Paris states that Lieutenant Guynemer, who has brought down a number of German aeroplanes, has undergone a painful operation in the Japanese hospital, a number of pieces of shrapnel being removed from his cheek. He refused to submit to an anæsthetic, merely remarking: "The Germans shall pay for this!"

FLIGHT



I HAVE no patience with the stranger in the train who would make me his chum, forcing upon me his confidences and his opinions.

It pleases me to sit sulkily in my corner, reading my own paper, forming my own ideas, not wishing to know what strangers think of things. I cannot sport my oak in the train. Others have the right and liberty to enter, yet I look upon that corner seat, when I have obtained it, as my private property, to have and to enjoy, without let or hindrance, until it shall please me to majestically throw open the door and step out, leaving others to close it or not, as they will.

Should the seat be vacant when the up-train reaches my home station, I step to it in regal fashion. I feel that it is reserved for my special enjoyment. Should there be an occupant trying to ape me in his fancied seclusion, I glare at him as I unwillingly seat myself between others, trying if possible not to make contact with either, for I am an Englishman with all an Englishman's stupid objection to sitting in a public place with the public.

I object to the man in the opposite corner handing his paper over to me the while he points to some paragraph with his finger, nodding and beaming round on the other people as though seeking their approval and exclamations, conveying by the twitching of his fingers, and his appearance of unrest that he will show it to them all in turn. I see his getting ready the raising of the eyebrows and the rounding of the eyes, expressing benefits conferred, and which must surely surprise, as he prepares to take back his paper before I have made it evident by the direction of my eyes that I have reached the last line, even though I have skipped five lines from every six in the reading, having just read the same thing in my own paper.

Politeness demands that I shall look pleased, or displeased, or surprised as I hand him back his paper. Politeness demands that I mumble "Fancy," or "Dear me," or something appropriate to the impression he has imagined his paragraph would make upon my understanding, and politeness demands that I hold my own paper high to cover my face in order that he shall not see reflected there my true opinion of one so utterly devoid of tact and good breeding as to dare to speak to a fellow human being, a passenger with himself in a public vehicle.

I am in especial trouble following a Zeppelin raid, for then it is, by being an unwilling listener, I learn all those things I did not know before.

Embryo Air Ministers there are by the score; they travel up to town every morning by trains arriving at any one of the numerous termini not before nine forty-five, and any one of them by his own showing is capable of taking on the job; their aviatic knowledge is colossal. They always knew beforehand that Zeps. were coming, on nights on which they come. When they do come, they always pass directly over their particular house. Never by any chance would they admit that they did not see one; always if they had had a rifle they could have brought it down themselves.

The R.F.C., the R.N.A.S., the A.A.C. and everything appertaining to them, and to flying, are bandied about the carriage in the most reckless manner. I can learn more about the things that do and do not take place in the Flying Services in half-an-hour's ride in the morning train than I could gather by years of study.

The Zep. which paid us a visit on Sunday week must be the latest thing in Zeps., for it can dart and dash about in a manner reminiscent of the elusive tiddler of boyhood's days. It's not a bit of use trying to burst shrapnel near it, for though hovering, it can suddenly dart forward or sideways to avoid them. Many of my fellow travellers can vouch for this—they said so.

I often try to remember what these people talked about before the war, but I cannot. That they talked about something of which they knew all there was to know, I have no doubt. One unfortunate word uttered in an unfortunate place—such word as, for instance, "Fokker fodder"—and they will gabble the roof off the carriage.

Once a fellow traveller who knew a little about myself, but not quite enough, placed me in a very uncomfortable position by calling upon me in my corner to settle an argument on flying, saying that I was the Editor of "FLIGHT." I shall never forget the look of reverence bestowed upon me by all the other travellers, nor my own embarrassment. I could not very well deny it to the undoing of one who evidently knew me so well, because the informal introduction was carried with such a high hand (as becomes everything these "knowalls" do) that it swept me off my feet. I never rode in that carriage again, and if ever my unwanted friend seeks me out in my retreat, I'll travel in the guard's van.

I have always thought it must be very nice to be an editor. I have thought that I could fill the chair very well, and use up dozens of blue pencils. I have seen them at "Press" dinners and luncheons, and they have always looked such well-groomed, jolly men, with little to do and plenty to get, as Serjeant Buzfuz said, that I could not account for that worried look and ruffled hair aspect so prevalent in the office as press day draws nigh, and fellows WILL NOT bring their copy down. Yet when I remember that year in and year out the journal goes to press at a certain minute on a certain day in the week, all made up with good stuff, not a bit too little and not a bit too much, I realise that there is reason for it.

Also I realise that after all perhaps editors are much as other men are, and want to leave their office behind when they travel by train. If I were the editor, and it got known on my line, I would travel with the women. They talk till the pictures curl up if they know one another, but let them be strangers, and they surround themselves with an icy, Harveyised-steel casing impregnable to others.



AIRSHIPS



By R. P. HEARNE.

My notes of last week were written before the first of the latest series of Zeppelin raids, and there is no need to go into the details of the matter now. But we may touch on certain aspects of the affair, and the first thing is to compliment our gunners and airmen for their effective action. Reckoning five raids, with an average of three ships to each, we had fifteen ships to be brought down, and our actual "bag" was one. Not a good score, the critic will say, and yet, in effect, a very good score, indeed.

The weather was rather in favour of the gunners, for the skies were mainly clear and starlit, but, nevertheless, there was a good deal of local mist, and this circumstance brings out the splendid daring of the airmen who went up on various nights. No praise can be too high for the courage of the man who flies over this country at night, for the risks are great.

The Gunners' Success.

I set little store, however, on the efficacy of aeroplanes for night fighting against Zeppelins in England, and it is evident that our chief reliance must be upon guns until we get Zeppelins of our own. A Zeppelin at night is located principally by its sound, but the airman is deafened by the noise of his own engine, and he must trust to his sight in finding an enemy airship. If he discovers the enemy by the aid of the searchlights of a local battery he gets in the way of the gunners, and his only utility will be that of going in pursuit of the Zeppelin when it beats a retreat. But if it gets out of sight he has little chance of finding it again, and the noise of his engine will but confuse the watchers on earth who are on the look-out for Zeppelins. For an aeroplane to be effective it must operate in daylight or moonlight.

London now Safe.

Judging from recent raids London is now practically safe from Zeppelin attacks under normal conditions, for the number of guns mounted round the Metropolis is so great that the Germans find an attack very unwholesome. In time, no doubt, every other important town in Great Britain will have its battery of guns also, and then the votaries of the gun defence system will claim complete triumph over the Zeppelin. But they do not estimate the tremendous cost of this defence in guns and gunners. We need every available gun and gunner on the battle front, and if the Zeppelins tie down a considerable number of them in this country they appreciably weaken our offensive power in France.

Costly Gun Defence.

The gun defence system is a fixed point protection, whilst the Zeppelin is a mobile enemy. Unless we evolve some improved form of strategy, a very great number of skilled men will be required if every town in England is to be protected, and it does not seem fair that because a man dwells in a very small town he should have no guns to defend him. Some ill-feeling has been created in the provinces by the idea that London has the best of the defences, but obviously the authorities had to make the capital secure first, as it stood in greatest danger. The only alternative to local defence of towns is a line of guns along the coast from Scotland to Cornwall.

Nor must it be taken for granted that London will not be attacked again. The Germans are ever striving to improve their ships in climbing power, speed, and reliability, and we must be prepared for many new devices in bombs, torpedoes, and other instruments of destruction. We must anticipate the time when Zeppelins running at eighty miles an hour or so, and at a height of from 12,000 to 15,000 feet, have engines which are not heard on the ground. A ship of this kind could dash over the coast line without detection, and on a cloudy night it might get right over London before it was observed. When its bombs called the searchlights and guns into action the Zeppelin would be in little danger owing to its great height and its speed.

Aerial Strategy.

These developments are not outside the bounds of immediate realisation, and hence our authorities must keep on improving their defences and intelligently anticipating new moves by the enemy. For that reason I advocate a Board of Aerial Strategy on which gunners, aeroplane experts, and Zeppelin experts would work out new problems in strategy.

It is satisfactory to see that the French and Italians are making use of their airships now for night raids, and during the spring and summer we may expect increased activity in this direction.

The "L.15."

Illustrations of the wrecked "L.15" bring to light several interesting things. Beyond any question the Germans are tinkering with the numbering of their airships, just as they do with their submarines. At first I fancied that the "L.15" might be a Schütte-Lanze; and in any case the naval ship which rightly bore the number "L.15" could not be of the latest type. But judging from a portion of the wreck the ship brought down is new in many respects, notably in the pointed end and the arrangement of the stabilising fin and elevating rudders.

The "L.15" seemed to have been unfortunate from an early hour of the raid, and most likely it was suffering from engine trouble and gas leakage. In this way it fell a more easy victim to the gunners than otherwise might have been the case. But this in no wise detracts from the splendid work done by our men, for the "L.15" still had power to travel at good pace, and a moving target at night tests the best gunner severely.

Gun *versus* Aircraft.

At the present time the situation is most interesting in the duel between gunners and aircraft. The gunners rightly claim that they can drive aeroplanes by day and Zeppelins by night to a height of not less than 10,000 ft., and literally rope them off from any place encircled by guns. That is the development reached by anti-aircraft

gunnery after twenty months of war, and it is little short of a triumph for the gun men.

But it is a local and, possibly, a temporary triumph. It also implies that every belligerent nation, even though far removed from the actual theatre of war, must fortify every important town and every munition factory; and even then, as aircraft improve in speed and climbing power, there is the likelihood of raids. At all events, the elaborate gun defences at home must be kept up, even though the army in the field be short of guns and gunners for offensive purposes. Anti-aircraft gun defence may be successful, but it is far more costly than the combined defensive and offensive measures which a fleet of aeroplanes and Zeppelins would give.



Another glorious week-end saw a considerable increase in the number of visitors at the aerodrome, and a splendid display of flying was provided for their benefit. In fact, except that there was no racing, it was quite like one of the pre-war days. On Saturday especially the flying was exceptionally good, for one of the finest displays of "stunt" flying since the looping and upside-down flying demonstrations given by B. C. Hucks and the late Gustav Hamel was witnessed. This was a special demonstration of the Curtiss tractor biplane given by Sydney Pickles. He gave two displays, one with and one without a passenger. It may be of interest to note that on the second occasion Pickles was putting the machine through its acceptance test and the passenger was an official observer, who, by the way, must have found his mission on this particular occasion much more pleasant than the monotony of the usual form of acceptance test.

In addition to numerous graceful banked turns, spirals, and various examples of the *chute de côté*, Pickles put up several loops and tail slides. The latter were by far the most interesting, and were quite different from anything I have witnessed before. He would suddenly turn the nose of the machine upwards and climb the machine almost vertically until it remained poised in that position for a couple of seconds or so. Then instead of dropping tail first as one would expect, the nose came down, and the tail went up at the same time, somewhat suddenly, so that the machine was in a position slightly beyond the vertical. Then followed a nose dive and a flattening out. He formed, in fact, an inverted V. When at the apex of the V the engine would stop and the propeller become stationary, but would start again on the nose dive that followed. On one occasion it stopped again after he had flattened out, and he had to make another nose dive to re-start it. On several occasions he did a succession of these V's coming close upon each other, so that he made a course across the aerodrome something like this: ^ ^ ^ ^ ^ ^, only dropping a very little the meanwhile. One of these tail slides, however, changed its mind at the last moment and turned into a loop, the nose flopping over backwards instead of forwards in a most peculiar manner. Altogether he made 15 tail slides and 12 loops, five of the latter being in succession. The loops, it should be mentioned, were exceptionally clean, and were preceded by a comparatively small dive. Whilst Pickles was giving his demonstration an Avro joined in and put up several loops of its own.

Later in the afternoon Pickles tested a 100 h.p. B.E. 2c, built by Hewlett and Blondeau, the hour's flight being in marked contrast to his other flights, for here only a plain, straightforward flight was required, and the 5,000 ft. climb and circuit after circuit of the aerodrome was made without incident—much to the surprise of many who followed every movement in expectation!

In the meanwhile plenty of other flying was going on, the Grahame-White team, Marcus D. Manton, M. Osipenko, C. Pashley, H. C. Biard, B. F. Hale, and J. S. B. Winter, were busy with and without passengers on the 60 h.p. G.-W. 'buses, R. Kenworthy banked and took up passengers on the 50 h.p. Beatty-Wright, and H. Sykes was out on a 45 h.p. L. and P. biplane. There were also several Service machines out, including a Curtiss, a Burgess pusher, B.E. 2c's., &c. Harry Hawker, with a passenger, paid a flying visit to the aerodrome on the two-seater Sopwith "bullet," and showed what his mount could do in the way of speed and slow landing—and very good too it was. As the evening drew on the schools got going and the aerodrome quickly assumed the flies-and-honey-pot aspect.

Sunday was fine but windy—somehow or other I seem to remember having commenced Sunday's portion of these notes like this on several previous occasions, but the Clerk of the Weather is to blame for this—the attendance was good, and the following put up several flights each: H. C. Biard, M. Osipenko, C. Pashley, Marcus D. Manton, and B. F. Hale, all on 60 h.p. G.-W. 'buses.

The Joint Air Committee.

In connection with the Air Committee it was announced on Tuesday that the Prime Minister had accepted, with regret, Lord Montagu's resignation of his seat on the Committee. While no definite official statement was forthcoming, it was understood that Lord Derby's resignation of the Chairmanship had also been accepted.

Changes at the War Office.

In the *London Gazette* of the 11th inst. the following details were given of some changes at the War Office affecting the Flying Service:—

Directors.—March 27th, 1916: Brevet Lieut.-Col. (Temporary Brig.-Gen.) William S. Brancker, R.A., from a Brigade Commander, and to retain his temporary rank whilst so employed. Brevet Lieut.-Col. (Temporary Col.) Duncan S. MacInnes, D.S.O., R.E., from a Deputy Director, and to be Temporary Brig.-Gen. whilst so employed.

Assistant Director.—Maj. Walter B. Caddell, R.A., from a Deputy Assistant Director, and to be Temporary Lieut.-Col. whilst so employed; March 27th, 1916.

Deputy Assistant Director.—Major B. Hopkinson, Unattached List, Territorial Force, from a Staff Captain at the War Office; March 27th, 1916.

Assistant Adjutant-General.—Major William W. Warner, retired pay, Indian Army, from a General Staff Officer, 2nd Grade, at the War Office, and to be Temporary Lieutenant-Colonel whilst so employed; March 27th, 1916.

General Staff Officer, 1st Grade.—Major (Temporary Lieut.-Col.) Lionel E. O. Charlton, D.S.O., Lancs. Fus., from a Wing-Commander, R.F.C., and to retain his temporary rank whilst so employed, vice Major (Temporary Lieut.-Col.) C. C. Marindin, R.A.; March 19th, 1916.

German and Austrian Air Losses.

According to the Italian *Giornale dei Lavori Pubblici*, definite news has been received from a most competent source that since the beginning of the war Germany has lost forty-seven Zeppelins and 368 aeroplanes, the number of airmen killed or captured in connection with these losses being 1,400. Germany has constructed forty new Zeppelins; over thirty of these are now in service, and the remainder are nearing completion.

Austria is said to have lost all her dirigibles and 184 aeroplanes, and has not been able to replace the former.

Zeppelin and Danish Steamer.

The crew of the Danish steamer "Alexy" had a startling experience at 1 a.m. the other day, while on the north-east coast. A pilot in charge of the vessel at the time states that his attention was attracted by a loud explosion, and on looking up he saw a Zeppelin not far away from the ship. It dropped five bombs in all, which were so near the steamer that she was shaken from stem to stern. The airship, which was about 600 ft. long, came so low that a number of men could be seen in one of the cars doing something to the lights. Although none of the steamer's crew was injured, the men got a severe fright, and it was a great relief to them when they saw the Zeppelin disappear in an easterly direction.



Of all the "tall" yarns of the war the one told this week by the Central News Petrograd correspondent takes some beating. A Russian seaplane, it is stated, was resting on the sea near its mothership, when the latter suddenly darted forward. A hostile torpedo had been fired at it from a submarine, but the look-out discovered it and the cruiser quickly shifted out of the way of the approaching missile. The seaplane, however, which was resting on the water was right in line with the torpedo. The aviator saw it coming, and by the time it reached him it was so nearly spent that he reached out his hand and "seized the deadly engine by the head." Before he could decide what to do with his "catch," the torpedo slipped out of his hands and sank. A very unkind thing to do, since it deprived him of an unique trophy in proof of his adventure. There *are* such disbelievers about!

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A short time ago the Beatty-Wright biplane fitted with an enclosed *nacelle* made her *début* under none too favourable weather conditions, and so well did she behave that during the next few days her services were much sought after by "ticketers," who one and all agreed that she was very easy to handle and that the enclosed *nacelle* afforded much greater comfort than the exposed position of the usual Wrights. In addition to her popularity at the Beatty school the new machine is quite an attraction at Hendon, where her appearance is a never failing source of merriment. More than one of those who have seen her in the air—personally I have not yet had the opportunity—have described her to me as the funniest thing that ever happened, and judging from her appearance when on the ground I can well imagine that she is distinctly quaint under those conditions. However, nothing can rob her of her popularity among the Beatty contingent, and after all she flies very well, so what matters it if she *is* the funniest thing anywhere around?

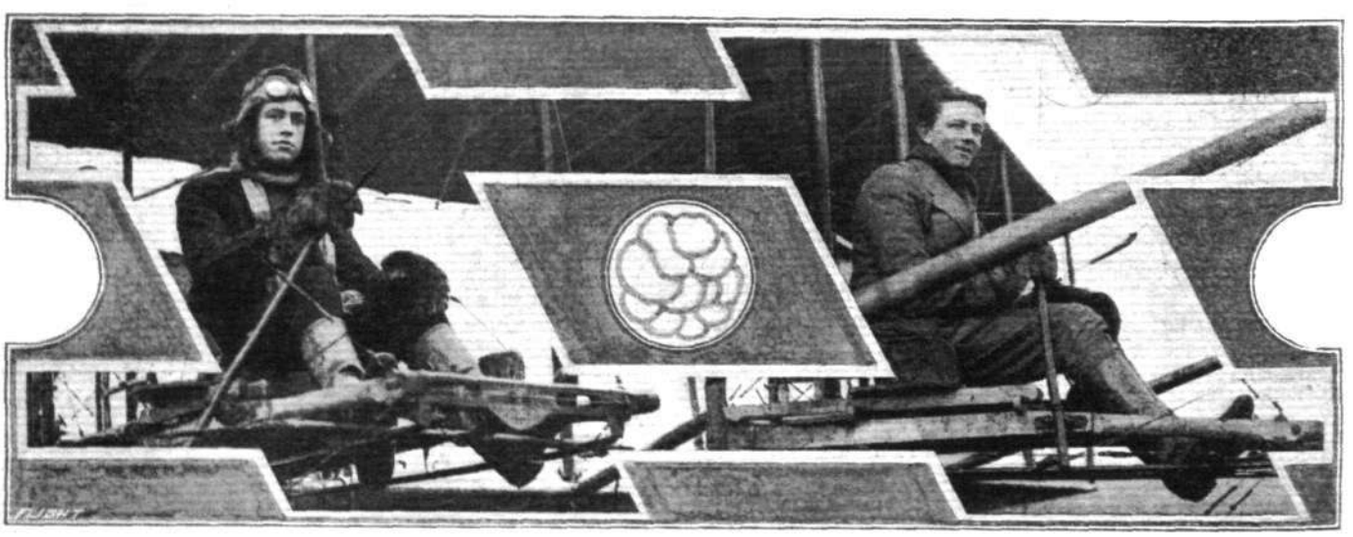
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Lying in a corner, a *nacelle*, and propped up against the walls, a pair of wings of a pusher looked strangely familiar to me the other day in the Hall sheds. On closer inspection these proved to be those of the Avro pusher exhibited at the last Olympia Aero Show. The machine, it appears, has been acquired with the idea of using it as a passenger carrier and for instruction purposes. It is intended to fit her with dual control, so that when the weather is too bumpy for ordinary school work she can be used for getting the pupils some extra practice at a height where the wind, although strong, is more steady than nearer the ground. At present the Avro is minus an engine, but in the near future this will be remedied, and after certain alterations have been effected the combination will be ready to take up her duties at the school.

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Mr. H. Benningfield, the young South African who came to England last year with some original ideas on aeroplane design, and for the purpose of getting a machine built according to his ideas, has joined the R.F.C, where his services in the double capacity of designer and pilot should prove very useful. While Mr. Benningfield is serving with the R.F.C., his designs are in the hands of a well-known aircraft firm, who are getting out the working drawings for his machine. About the latter it is silence at present, but I hear that several people in authority have expressed a good opinion of it, so that it is quite probable that S. Africa may be an early contributor of an original machine to our air services.

ÆOLUS.



Harry A. Rigby and P. V. Tanner, of Queensland, who both took excellent "tickets" at the G.-W. School recently. Mr. Rigby made his first landing—in the qualifying tests—14 yds. from the mark, and did his *vol plané* from 500 ft., while Mr. Tanner went one better by making his first *atterrissage* 12 yds. from and his second dead on the mark. In order to make assurance doubly sure, he took his machine up to 1,750 ft. in the altitude test before starting his *vol plané*, which was carried out from this height in a manner that left no doubt about his ability in handling his mount.

FLIGHT

THE AIR SERVICES IN PARLIAMENT.

On April 5th, on the motion for the adjournment of the House, Mr. Pemberton-Billing, dealing with the question of the defence against air-raids by enemy aircraft, said he thought he was echoing the opinion of a very considerable majority of voters when he said they were not satisfied with our air services, that they were not satisfied with the defence—or rather, he should say, the lack of defence—which was in being.

He said he thought the Under-Secretary for War owed him a debt of gratitude for having thus afforded him the opportunity of making a statement so soon after the recent devastating raids which covered a very considerable area of this island. On very few occasions had the Germans failed to carry out their threats concerning air raids, and the country was right in demanding that it should have some other forms of defence than a few aeroplanes unsuitable for the work to which they were set, darkness, and a request that citizens would remain quiet and take their punishment. It had been suggested that we must take this affront to our national dignity and this blow at our national life calmly because our men in the trenches were suffering even more cruelly; but that was a very poor argument. The men in the trenches had what might be described as the blood lust to support them; they had the feeling that they could strike back, and that keyed them up in a way which no ordinary citizen experienced as he stood in the street hoping that the next bomb to fall would not include him among its victims.

Our defences were not only inadequate, they were not even properly conducted. He had a letter from an officer in charge of an anti-aircraft gun which had it been used might have done good service, stationed in a place which might be looked upon as the last line of defence of London.

The following were the terms of that officer's letter:—

"*The officer on duty stated that he received no official warning* of the raid. He was telephoned to by the local station-master, who told him that 'traffic was stopped.' Later the station-master telephoned him and stated that aircraft was some thirty miles distant. He later heard the Zeppelln and saw it clearly with his own glasses. The Zeppelin was within easy range when sighted on the return journey, having crossed in the same direction previously. When sighted it was within easy range and was a clear shot, but the gun layers could not pick it up as the searchlight was not showing. The officer afterwards telephoned the War Office, who could not understand why he had not been warned and who referred him to his control. He telephoned there, and they expressed astonishment that he had not been warned."

The only official message which the officer received was on the following morning to the effect that the coast was clear—presumably clear for the Zeppelin. This was disgraceful mismanagement. The officer could not engage the Zeppelin; because he had no official instructions he had to wait. He wished to know what discretion was left to such officers. Were they not allowed to fire a gun or raise a hand in defence of the country?

Once a Zeppelin had crossed the coast it was handed over to the military, but there was a moment before it crossed the coast, and then it was for the Admiralty to take charge.

On the night of one of the raids in question a certain commander in the North Sea wrote in a letter: "On Friday night I intercepted a Zeppelin flying in. We had an engagement lasting 35 mins. He bombed me, then put his machine gun on to me. He then bombed me again. He tried hard, but ultimately flew on his journey (to our country). I almost wept because I had no night sights on my popgun." If that officer's craft had been fully equipped he might have accounted for the Zeppelin, and thus saved lives and property and the country from a certain amount of indignity.

He asked whether the trawlers and drifters engaged in patrol work in No. 1 district were armed with guns capable of engaging Zeppelins and fitted with night sights. Had it been reported that these trawlers and drifters were properly equipped and armed, and had the Admiralty taken steps to check the accuracy of the report? Were these boats supplied with navigating instruments, and, if not, why not? These were a few of the most important points affecting the lives and well-being of men who were daily and nightly suffering in the North Sea, suffering even more, in some cases, than the men in the trenches.

If these men, amongst whom were some of our bravest defenders, had no suitable instruments for navigation or guns with which to protect our coasts, why were they called upon to suffer the discomfiture of knocking about the North Sea in a bit of a boat? Was this another form of eyewash or another public scandal? He considered a new system of defence was absolutely of vital importance to the country, and the temper of the people was in a very unhappy state. It seemed to him from what he had seen that most indiscriminate warning was given, everybody seeming to be warned but the one person who could defend us, when everybody seemed to be aware that Zeppelins were coming but the one man who stood at the gun, and he asked that these things should cease. He deprecated altogether further trying to patch up our present inefficient system which in eighteen months had brought down one Zeppelin. He did not think any man in the country could really point to the man who was responsible for bagging "L. 15." He would ask if certain types of seaplanes which were absolutely useless and unused in their present state could be adapted, as one had already been adapted owing to the recent remarks in Parliament, and most successfully adapted. A seaplane, which had on it heavy floats approximating in weight from 500 to 1,000 lbs., very strongly built for its peculiar work on rough water, was converted into an aeroplane by having its floats cut off and wheels put on. The result was that this machine succeeded in leaving the ground in a remarkably short space, it lifted six hours' fuel and nearly 800 lbs. of explosive, and it had a speed of 80 miles an hour. That meant a range of 480 miles with 800 lbs. weight of T N T, which, if it were dropped where it ought to be dropped, where it ought to have been dropped months or years ago, would have a very useful influence in stopping the present irritating raids of aircraft upon our country. There existed in this country at the present moment not one, but he would dare say 100 machines, lying about our coast towns, useless as seaplanes because of the immense weight of their floats. They were built to put up with a certain amount of buffeting by the sea, but they were not much used, and their efficiency was rapidly declining. When used after two or three days they became incapable of leaving the water, and the boats to which they were anchored. He suggested that these seaplanes were of no kind of utility in this war. We sent three of them on a recent journey, but owing to the disgraceful condition in which they had been kept, they dropped down into the sea, never having reached their objective. He maintained that these machines in this country were all useless, but if we deprived them of their floats and fitted them so that they would be able to carry, in lieu of the dead weight of those useless floats, 800 to 1,000 lbs. of useful explosives, they would be able to deliver the goods right in the very place where our enemy were building these night menaces, these airships which were causing so much distress and unhealthy excitement throughout the entire country.

He suggested, and he did it with great diffidence and with a full sense of what he was saying, that if no one could organise these raids, if no one could see their way to strike back immediately with force and decision, then he would ask leave from the House, and ask to be allowed to organise such raids, and, if necessary, to lead them. He said that with a full sense of responsibility. If he was provided with material, both human and otherwise, which was already lying round this coast, serving no useful purpose, while involving great national expense, he thought he could suggest a way whereby we might bag as many Zeppelins on one day as we had done in a year of work with misplaced guns, misplaced confidence, and aeroplanes which were not fit for their work.

His methods in this House were not, he believed, quite what were expected of a politician. The public were not looking to him to be a politician; they were looking to him not because he had claimed all that his critics said that he had claimed, but because he had claimed to know something about the job for which he came to the House. They were looking to him not so much to criticise the Government as to offer them some way out and some definite proposals. He asked the Government to give him the opportunity of offering them those proposals—not across the floor of the House—and listen to him not with the hope that he would say something upon which they might trip him up, but with the hope that he might say something which they could use and which might be of service to the country. It was quite feasible that a great deal of what he had to say, and to say in private, could be turned to good account by the Government. If he might quote from a journal which was not a stranger to that House—he referred to *Punch*—he said that they accused the Government, after the last two or three weeks of the air, in the following terms. "Mr. Punch" said:

"I feel the Government have their heads rather than their hearts in the air."

Mr. Tickler associated himself with the appeal made by Mr. Billing, that means should be taken to protect the inhabitants of the east and north-east coasts.

Mr. Tennant, the Under-Secretary for War, in his reply, regretted very much he had not had sufficient notice to be in time for the opening of Mr. Billing's speech. He said what the House and the country really wanted from the War Office were more deeds than words. He would like, if he could, to convince the house that the Government had been taking very active steps and did not require to be spurred in the least by speeches in that House. Many hon. members seemed to think that the Government were doing nothing.

He should have thought that anyone who had watched the proceedings during the last weeks would have come to a very different conclusion. He had announced in the House that more than one raid upon London was beaten off without the inhabitants becoming in the least aware of the fact and without any of the inhabitants in the Metropolis knowing that the attacks had been launched against them. That was very significant. Moreover, other parts of the country had been armed and provided with materials for resisting air raids. He thought it was hardly necessary for him to say that it was not possible to prevent air raids coming to any one place in the United Kingdom. It was a self-evident fact. He hoped that the time might come when they would be able to meet the attacking ship or aeroplane very shortly after its arrival. To say that it never should be able to arrive here at all was to say what was impossible. He desired to state that not only was "L. 15" beaten down into the Thames, but another Zeppelin was hit somewhere off the coast. The knowledge of this fact was discovered from a wireless message sent by the commander of the ship, which was not picked up in the ordinary sense by another wireless apparatus, but was picked up off the ground in the form of a carbon copy of the message. Mr. Tickler seemed to think that anti-aircraft guns could spring up out of the ground simply because we desired them. Every effort was being made to secure these guns at the earliest possible moment. Parliament had agreed long ago that the first needs of the country were in the theatres of war, and we could not starve, nor would the House wish to be starved, the armies in the field and in the various theatres of war, of any kind of material necessary in order to protect the soldiers. After the Commanders-in-Chief had been provided in the theatres of war with all they required, then we would be able to produce material for the defence of our shores here. It was not true to say that it was hopeless to try and defeat air raids. He welcomed the offer made by Mr. Billing to the Government, and he certainly would not neglect it, and hoped to be able to claim his co-operation and assistance in what must be the desire and hope of all, to be able to deal more effectively than we had done with these air raids. He would make it his business to ascertain in what manner Mr. Billing thought he could best assist them, and should make the greatest possible use of the services which he would put at their disposal. The Government sympathised most sincerely and earnestly with those who had lost relatives by these raids, and he desired to say to the population of those towns that had been raided that every step was being taken, within the limits at the Government's disposal, and that they had established a very considerable machine, much larger and wider than many members knew of. They had great hopes that they would be able to perfect it in the near future more rapidly than they had been able to do in the past, although this matter had only been within the province of the War Office for a comparatively short time.

Dr. Macnamara, the Parliamentary Secretary to the Admiralty, in replying to Mr. Billing, explained again broadly the duties of the two departments, the Navy and the Army Council. He applied the provisions of the duties of these two departments to the last four air raids, and he thought that, looked at in the light of the duties which had been undertaken by his department, he was inclined to say that they had been performed properly. In regard to the question of the equipment of craft in the North Sea, if details were given to him he would certainly go through them with him, and see how far they might be true. In respect to the comments on the inefficiency of seaplanes, he was not an expert constructor of aeroplanes or seaplanes, nor even a flying man, and he could only rely upon expert advice that was given to him. He would, however, take care that Mr. Billing's views on seaplanes should be communicated to those who were experts and who were fully able to say what the criticisms were worth, and the weight which ought to be attached to them. In appealing for a hearing for his case Mr. Billing knew that every hearing would be given to him. Already the fullest opportunity had been given to him to state his views as to what ought to be done, and his views would be placed before the First Lord of the Admiralty at the earliest possible opportunity. With regard to his offer of assistance, he would say that if any man could assist them in any way to meet this menace they would be most ready to accept it and be grateful for any contribution Mr. Billing might be able to make.

The Mann Biplane.

IN the House of Commons on April 5th Mr. Tennant, replying to Mr. Hogge, said that the Mann and Grimmer M2 aeroplane had been brought to the notice of the War Office. The first was to have been tried by the War Office, but the machine was smashed before it could be submitted. The firm then applied for time in order that the War Office might consider the merits of the aeroplane. The designs and details had just been received, and were now under consideration.

Mr. Hogge: Is the right hon. gentleman aware that this firm will have to close down unless they have financial assistance?

Mr. Tennant: I was not aware of that. It will be taken into consideration.

Mr. Lynch: Is it not in the public interest to foster such a firm which has shown considerable inventive genius and great skill?

Mr. Tennant: The hon. gentleman informs me that they have shown all this extraordinary skill and genius. That has surely still to be proved. If the facts are as he believes, no doubt financial assistance will be given.

Mr. Hogge: Is the right hon. gentleman aware that £1,000 would complete this experiment?

Mr. Tennant: I am obliged to the hon. member for the information.

The Royal Aircraft Factory.

IN reply to Mr. Joynson-Hicks, Mr. Forster stated that the total number of men employed in the Royal Aircraft Factory is 3,223, and their weekly pay amounts to £9,438.

A further question as to the salaries paid to the five senior officers of the R.A.F. drew the following information that the salaries actually being paid in the period immediately preceding the war were £1,500 (part time), £500, £400, £350 and £350. The salaries being paid now are £3,000 (full time), £630, £550, £550 and £450.

The Dummy Gun.

REPLYING to another question by Mr. Billing as to allegations of a dummy gun being erected on the roof of a foundry in an East Coast city, Mr. Tennant said that the hon. gentleman had presumably in the course of his experience heard of *ruses de guerre*. The object of such measures was to deceive the enemy, and if such a measure had been resorted to in this country its object would be to mislead the enemy's air scouts or agents, and not to hoax the civil population. Perhaps I may be permitted to say that it is not always in the interests of the country to tear aside the veil.

The Firing of Anti-Aircraft Guns.

MR. BILLING asked whether on April 2nd a Zeppelin passed on two occasions within easy range of an anti-aircraft gun stationed in an Eastern county; if so, why was the gun not fired; and whether an officer is left without any discretion as to when he shall fire?

Mr. Tennant replied that as there are no orders extant which might cause the officer in charge of an anti-aircraft gun to act in such a way and as the answer to the last part of the question was in the negative, there was no ground for supposing that anything of the kind occurred.

The Joint Air Committee.

MR. TENNANT, replying to Mr. Billing, said that there were, of course, differences of opinion, but no friction whatever existed between members of the Joint Air Committee. On Tuesday Mr. Tennant stated that he understood that two members had resigned.

The A.A.C. and the R.G.A.

REPLYING to Mr. Nield in the House of Commons on April 5th, Mr. Tennant said it was not proposed to transfer any large number of the men of the Royal Naval Anti-Aircraft Corps to the Royal Garrison Artillery. If any transfers took place they would be optional, and in such small numbers that the expenditure on uniform would be inconsiderable.

One Headquarters for Both Services?

MR. BROOKES asked whether the Admiralty had considered the propriety of housing the administrative offices of the R.F.C. and the R.N.A.S. under one roof.

Dr. Macnamara said he entirely agreed with the implication in the question, that close co-operation and interchange of ideas between the Navy and Army Air Services are essential. Whether the suggested method of obtaining them is desirable or not, was a matter for consideration.

In reply to Commander Bellairs, who asked whether even the R.N.A.S. was not housed at present under one roof, Dr. Macnamara promised to look into the matter.

The Supply of Aeroplanes.

IN the House of Commons on April 6th Mr. Bennett-Goldney asked if there had been and if there was still any overlapping, preventable delay, or extravagance with regard to the purchase, supply, and manufacture of aeroplanes, seaplanes, other aircraft, and their accessories owing to the Munitions Ministry still being left without similar control in these matters as that which it now holds with regard to guns and other vital munitions of war; if separate design and contract departments are still run either by the Admiralty or the War Office or both, altogether apart from the Ministry of

Munitions; and, if so, whether he could say when adequate steps would be taken to place all the business connected with the supply of aircraft, &c., under the direction of the Ministry of Munitions so as to ensure greater efficiency, speed, and economy both in construction and output?

The Prime Minister replied that the whole question of the manufacture, supply and distribution of aircraft, and their accessories, for the Naval and Military Air Services was being investigated by the Joint War Air Committee. The points raised in the question could be more satisfactorily dealt with when he was in possession of the Committee's recommendations.

Mr. Billing asked whether there were any resignations pending which were likely to affect the decision of this Committee, but the Prime Minister said he should like notice of that question.

The Coming Debate on the Air Services.

IN reply to Mr. R. McNeill, who asked if he would say when he would be able to give the promised day for the discussion of the position of the Air Service, the Prime Minister said he was afraid it would be impossible to give a day before Easter. He understood that the subject had been a good deal discussed in the House during the last three weeks.

Mr. McNeill: Did not the right hon. gentleman on a former occasion, or did the Secretary of State for the Colonies, indicate to the House there would be an opportunity before the 15th April?

The Prime Minister: We will do our best. I do not know that it makes much difference whether it is immediately before or after. We will give a day.

Mr. Billing: In view of the urgency of the matter, may I press the right hon. gentleman to give a very early day for this discussion?

Aircraft Engines.

MR. PEMBERTON-BILLING asked the First Lord of the Admiralty whether he could inform the House what negotiations had taken place for the purpose of securing the rights of construction in this country of a famous Barcelona engine.

Dr. Macnamara replied that he could not undertake publicly to give particulars respecting the provision of warlike material. If Mr. Billing desired to be supplied with any facts for his own private information in regard to this and similar matters, he should be very glad to give his request every consideration.

Orders to Attack Raiders.

IN reply to Mr. Annan Bryce, who asked as to the giving direct orders for the ascent of aeroplanes, Mr. Tennant said: "As I have stated, I cannot give any information as to the system of command or communication adopted for this purpose, but I may say that the assumption underlying this question and others which have been put, that leave has to be obtained from London before an aeroplane may ascend, is incorrect."

Utilising Seaplanes for Raids.

MR. PEMBERTON-BILLING also asked the First Lord of the Admiralty whether the suggestions put forward for the immediate adaptation for offensive action of certain types of seaplanes at present unemployable would now be adopted, in view of the necessity of striking an immediate blow in aerial offensive against the Zeppelin bases of the enemy?

Dr. Macnamara replied that he did not think it desirable in the public interest to answer questions about future naval operations.

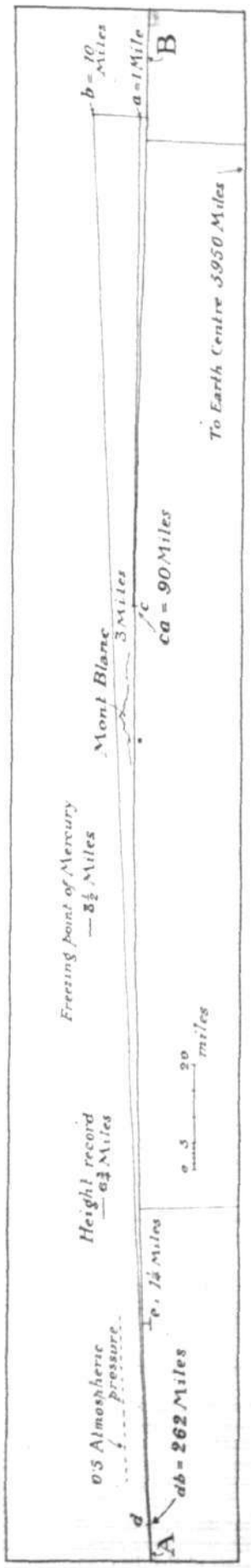
The Raid in Schleswig.

REPLYING to Mr. Billing, who asked whether any further details could be given as to why three seaplanes were lost, Dr. Macnamara said that naturally they had no information from the seaplanes in question beyond the statements which the enemy has published or allowed to be published.

Civilian Schools and Conscription.

IN reply to Mr. Billing, who asked whether the principals and instructors of the civilian schools of aviation are being called up under the Military Service Act, 1916; and whether the War Office realised the value of these training establishments,

Mr. Tennant said principals and instructors of civilian schools of aviation will be called up under the Military Service Act and, where possible, placed in the Royal Flying Corps if unmarried and not attested, unless they have received certificates of exemption or have applied for exemption to a local tribunal. On Tuesday Mr. Tennant stated that where instructors and principals of civilian flying schools were proved to be doing work of value, they would of course be considered.



Ban on Kite Flying.

THE flying of kites has been prohibited at the parks and open spaces controlled by the London County Council, except when authorised by competent military authority.

A DIAGRAM OF HEIGHT ABOVE THE EARTH'S SURFACE.

The purpose of the above diagram is to show clearly the relation of various heights—of which we hear so much in connection with aviation—to the outline of the earth. The curved line, A B, represents an arc of the earth's surface drawn to scale of ⅛ in. to 1 mile. The diameter of the earth—7,900 miles—drawn to this scale would be 20' 7". *a* represents an aviator at an elevation of 1 mile. From this point the aviator would see as far as point *c*, or about 90 miles. At a height of 10 miles, indicated by *b*, the point of vision would be extended to *d*, or to about 262 miles. In practice the aviator would see far less, because the atmospheric conditions would seldom allow of anything like perfect vision. Also included on the diagram are the highest European mountain, Mont Blanc, 15,782 ft. (about three miles); the height record established by Suring and Berson in 1901 in a spherical balloon, 10,800 metres, *i.e.*, about 6¾ miles; and the freezing point of mercury—about 8½ miles—as indicated by measuring instruments used with experimental balloons. It was not possible to show on the diagram even the highest structure erected by man—the Eiffel Tower; this is one-fifth of a mile high, and when drawn to the scale of our diagram it would be only 1/5 of an inch. As a contrast, *e* represents the deepest shaft ever bored, reaching a depth of about 6,560 ft., or 1¼ miles. It is supposed that the atmosphere extends to perhaps 200 miles above the surface of the earth, varying in density; it has been found that half its mass is within 4 miles of earth. These 4 miles provide ample scope for development of aerial navigation, and they represent also millions of cubic miles added to the richness of man's inheritance.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British. *General Headquarters, April 4th.*

"Yesterday a German machine was shot down behind our lines south of Souchez. Pilot and observer were both killed."

In the *communiqué* issued by the War Office on April 6th regarding the fighting on the Tigris at Umm-al-Hannah on April 5th there was the following :—

"Aeroplane reconnaissances then reported that the enemy was strongly reinforcing his entrenchments at the Falahiyah and Sanna-i-Yat positions, respectively 6,000 and 12,000 yards from the front trenches at Umm-al-Hannah."

General Headquarters, April 9th.

"Yesterday a Fokker monoplane came down in our lines. The pilot was taken prisoner and is unwounded."

French. *Paris, April 4th. Evening.*

"Last night one of our dirigibles dropped 34 bombs on the railway station of Audun le Roman."

Paris, April 5th. Afternoon.

"In the region of Verdun our pursuing aeroplanes on April 4th had 15 aerial encounters, in the course of which a German aeroplane with two engines was brought down near the pool of Haumontsfourneaux.

"Another enemy machine fell near the Bois de Tilly, while a third fell vertically to the ground. All our pilots returned safely.

"On Monday night one of our air squadrons dropped 14 shells on the railway stations of Nantillois, and five on the bivouacs of Damvillers."

Paris, April 6th. Evening.

"During the month of March our military aircraft displayed great activity along the entire front, notably in the region of Verdun. In the course of many aerial engagements thirty-one German machines were brought down by our pilots, nine of which descended in flames or crashed to the ground within our lines; while twenty-two were brought down in the German lines. There is no doubt concerning the fate of these twenty-two machines, which our pilots attacked over the enemy's lines. Twelve of these aeroplanes were seen coming down in flames, and ten descended in headlong spirals under the fire of our aviators. Moreover, four German machines were brought down by our special guns, one in our lines in the neighbourhood of Avocourt, and three in the enemy lines, one near Suippes, one near Nouvion, and one near Sainte Marie à Py.

"To this total of 35 German machines destroyed during the month of March must be contrasted the figures of our aerial casualties, which amount to 13 machines lost, as follows: One French machine brought down in our lines and 12 French machines brought down in the German lines. The great disproportion existing both as regards our own machines and those of the Germans between the descents in the French zone and in the German zone is significant. According to a paper found on a prisoner the German pilots are reported to have received orders to cross their own lines as little as possible. The balance for the month of March shows, on the contrary, that our chaser planes are constantly flying over the enemy's territory seeking a fight."

Paris, April 10th. Evening.

"During the daytime, on April 8th, one of our pilots during an aerial fight in the Verdun region brought down a Fokker, which fell in our lines near Esnes. On the 9th another Fokker was brought down by the fire of our special guns. The machine fell in the Woevre in the German lines. A third Fokker landed in Champagne. The machine was intact. Its pilot was captured.

"This afternoon a German aeroplane flew over Nancy and dropped two bombs, which only caused slight material damage."

Russian. *Petrograd, April 4th.*

"Enemy aviators flew over our cantonments at many points and dropped nine bombs on the town of Liakhovitchi (in the centre).

"Enemy aircraft dropped bombs on Kovno and Sarny."

Petrograd, April 5th.

"On the Dvina front enemy aeroplanes were very active and dropped bombs.

"Our aircraft effected several successful raids. In the region south-west of Dvinsk Aviator Lieutenant Brbass brought down a dirigible, which fell in the enemy's lines.

"Hostile aeroplanes also flew over a great part of General Evert's front, dropping bombs at many places."

Petrograd, April 9th.

"Enemy aviators flew over many places on the Dvina front and dropped bombs. Our airmen made some successful flights. In the Riga region one of our aircraft of the Ilya Mouromets type flew over the enemy's lines and dropped bombs on his cantonments."

Petrograd, April 10th.

"German aeroplanes dropped bombs near Remershof and Dvinsk railway stations. North-east of Lake Vishnevskoie there was lively activity by the enemy artillery.

"On the Oginski Canal enemy aeroplanes dropped bombs on our lines. In the region of the village of Komora, south-west of Pinsk, the Germans approached our positions in boats, but were driven off by our fire."

Italian. *Rome, April 4th.*

"Enemy aeroplanes attempted obstinate attacks on our territory, but were repulsed by our artillery fire and counter-attacked by our aircraft. One aeroplane succeeded in dropping two bombs on Bassano, causing only very slight damage. One of our Caproni machines dropped a heavy bomb on Grafenberg (Gorizia), causing a fire."

Rome, April 5th.

"Enemy aircraft yesterday attempted to make their way to Verona, but they were immediately driven back north. Other aircraft succeeded in dropping a few bombs on Bassano, killing two children. The enemy also attempted to make air raids in the Lower Isonzo zone and on Grado, a few bombs being dropped on some hamlets. Our artillery and defence squadrons drove back the enemy aircraft, two of which were seen to come down suddenly near their own lines."

Rome, April 10th.

"Last night one of our airships flew over the fortified position of Riva (at the head of Lake Garda) and dropped 40 grenades and torpedoes on the works, emplacements, railway, and the military buildings. The results were observed to be very effective.

"The airship was caught by the enemy's searchlights and rockets and subjected to intense artillery and rifle fire, but returned safely."

German. *Berlin, April 5th.*

"The following are the results of the aerial battles on the Western front during March. The German losses amount to: In aerial battles, 7 aeroplanes; by being shot down from the earth, 3; missing, 4; making a total of 14 aeroplanes. The French and English losses amount to: In aerial battles, 38 machines; by being shot down from the earth, 4; by involuntary descent within our lines, 2; a total of 44 aeroplanes. Twenty-five of these enemy aeroplanes fell into our hands. The descent of the other 19 machines has been observed without leaving any doubt."

Berlin, April 9th.

"On Saturday four of our naval aeroplanes attacked the Russian aerodrome at Papensholm, near Kielkond on Oesel (the large island at the entrance to the Gulf of Riga). Twenty bombs were dropped. Two out of four enemy aeroplanes which went up were forced to descend. In spite of heavy fire from anti-aircraft guns our aeroplanes returned safely."

Berlin, April 10th

"In air-fighting south-east of Damloup and south-east of Chateau Salins we shot down a French machine. Each of the occupants of the first machine was dead. One enemy aeroplane was observed to have been brought down in the village of Loos, and another in the Caillette Wood."

Austrian. *Vienna, April 5th.*

"An attack made by our aviators on the Italian coast achieved splendid results. A counter-attack by two enemy machines was repulsed by machine-gun fire. Anti-aircraft batteries twice hit one of our machines and compelled it to land.

"A second machine went to the aid of the one that had landed, took on board its occupants, and destroyed the machine. Owing to damage sustained and the state of the sea, it was unable to rise.

"An enemy torpedo boat and two other boats went to capture the machine, but were compelled to return by machine gun fire and bombs from our other aeroplanes. Two of our machines then rescued all four occupants, and burnt the remaining damaged machine.

"This rescue took place under machine-gun fire and the dropping of bombs from two Italian naval machines, which were circling above them."

Turkish. *Constantinople, April 8th.*

"On Tuesday last eight enemy aeroplanes flew over Gallipoli. Captain Buddecke attacked them, and in the course of an aerial fight, shot down an enemy aeroplane. The search of the enemy's torpedo-boats, which came to its assistanee, was fruitless."

Constantinople, April 9th.

"In the fighting on April 5th and 6th . . . . one aeroplane was brought down."

From Other Sources.

A Central News correspondent at Copenhagen, writing on March 31st, says :—

"According to information now received here from eye-witnesses of the British air raid on the Zeppelin station in Schleswig, none of the British aeroplanes were shot down either by German aeroplanes or coast batteries, or the battery at the Zeppelin station. One of the machines did not reach the coast, and was discovered by a German fishing boat at sea. A boat put off from the Island of Sylt and captured the machine. Two others reached the Zeppelin station ground and were fired at, but not damaged. Both had engine trouble which forced them to land.

"The attack was completely unexpected, a German inspection ship along this part of the coast being dealt with by the British squadron."

In the course of an article describing a visit to the French front at Verdun, the military correspondent of the *Times*, speaking of General Petain's work in reorganising the defence, says, " . . . . and finally to restore to his side the mastery in the air. In this latter element the enemy had become so emboldened that the German airman dropped down to 400 metres from the ground in order to discharge bombs upon French battalions on the march. . . . The French airmen also deserve great credit for restoring the balance in the air. This they began to do during the second week in March, and during my visit, although I have seen many French airmen facing German anti-aircraft guns with the utmost intrepidity, I have not seen a German airman penetrate our front, and on one day the French disposed of six German aeroplanes without any loss. From what I have seen I consider the French anti-aircraft gun fire superior to the German, and our Allies appear to me to be working on more scientific principles in their conduct of this gunnery. The instant an Aviatik or Fokker comes within range the little puffs of the shrapnel encircle him and he is lucky if he escapes back to his own lines. . . . . The French are assuming superiority in artillery. They continue their fire all day and all night. They hold every road, reserve position, ravine, wood, and possible billeting zone under their fire. When the Germans forsook the roads and took to the paths the French airmen spied them out, and these tracks are now treated like the woods. . . . A French patrol went out by night to examine one of the foremost German trenches which had been reported full of men by our air observers. The trench, in effect, was full of Germans, but all were dead."

The *Daily Mail* correspondent at Rotterdam, writing on Sunday, says :—

"The aerodrome at Houttave, near Zeebrugge, was destroyed by fire as the result of the Allies' recent air raid. The damage to the aerodrome at Zeebrugge was not so great, and men are now busy repairing the structure which houses many of the aeroplanes. A few days ago collapsible wooden buildings arrived at Zeebrugge from Germany to take the places of the dwellings destroyed by Allied bombs.

"The German air service in Flanders is composed of five large aerodromes at St. Denis, Houttave, Zeebrugge, Bruges, and Rumbeecke and some smaller sheds, altogether sheltering 90 aeroplanes, 20 of which have been destroyed.

"The *Journal* announces that the son of M. Paul Doumer, ex-Governor-General of Algeria, has brought down two Fokker aeroplanes. Lieut. Doumer has belonged to the Aviation Corps since last November. He served at the beginning of the war with the Chasseurs-à-Pied. In August, 1914, he was wounded at Lunéville. He was mentioned in an Army Order for gallant conduct, and was made a Chevalier of the Legion of Honour. On March 18th he engaged three German aeroplanes single handed. Despite the unequal nature of the combat, he succeeded in bringing one of them down, and then compelled another to descend. A few days later he attacked a Fokker, and brought it down in flames in the enemy's lines."

Writing to the *Daily Telegraph* from Milan on April 5th, Mr. A. Beaumont says :—

"The air battle of Ancona, forms a brilliant page in Italian aerial defence. For the first time the rapid-firing anti-aircraft guns of the coast batteries and on motors and in boats have given full proof of their efficiency, and the enemy incursion was turned into signal defeat, in which three out of five Austrian machines were disabled. Inhabitants of Ancona to-day are proud of the achievement, and the victory is celebrated with public rejoicing.

"The Italian coast along the Adriatic is like the English coast, in that it is a constant temptation to the enemy, and is particularly exposed to aerial incursions. It takes Austrian seaplanes only a few hours to cross the Adriatic and make piratical attacks on populous Italian towns and villages, such as Ancona and other smaller places. But the military authorities have taken energetic means to cope with the danger and to protect the unarmed civilian population, and the success of their measures has now been peremptorily proved at Ancona for the first time. It was about noon on Monday when the danger signal was given. The sky was bright, and the sun shining over a quiet sea, with light mists slightly veiling the noonday brilliancy at heights of 5,000 to 6,000 feet, just about the elevation at which aeroplanes usually travel. The Adriatic was blue and calm, gentle breezes were coming from the sea, and everything seemed to breathe peace and quiet rather than war. Five Austrian aeroplanes, however, had been sighted, flying in the direction of Falconara. Thence, making a right angle, they headed towards Ancona. With the sun at their back they took advantage of slight mists at a high elevation, in which they time and again completely disappeared.

"The inhabitants of Ancona meanwhile took shelter inside their houses and cellars, and in a few minutes the town was in complete silence ; only the troops belonging to batteries and motor cars with anti-aircraft guns were moving about. Suddenly, at three o'clock, the first shots were heard. They rapidly multiplied, and before long an aerial battle was in full swing. Five enemy seaplanes, flying at a tremendous height, were approaching the town, and would be over it in a few minutes. Their white wings were distinguished with difficulty against the light mists, and their course could only be followed by a line of dotting cloudlets formed by exploding shells. Inhabitants stood in the fields and on the hillsides to watch the progress of the battle, when to their immense joy before the first aeroplane arrived over Ancona they saw its big wings suddenly turn, and, like a crippled bird of prey, it fell perpendicularly into the sea.

"Half a dozen big Italian Caproni machines appeared from opposite directions, and by strategic evolutions compelled the Austrians to keep within a circle, which was always narrowing. Meanwhile the coast batteries kept up an incessant fire, and armed motor cars followed along the coast, firing as they went. One submarine in the port joined in the defence, and discharged shot after shot from its turret. Within less than half an hour the aerial battle was at its height, and the air shook with the incessant explosion of shells. Several bombs dropped in haste from one aeroplane which had been able to reach the city added to the deafening noise. The attack became too hot for the Austrians, who precipitately turned tail, dropping their bombs into the sea.

"But the coast batteries by this time were getting the exact range, and two of the four remaining enemy aeroplanes were hit by shells. One fell far out to sea and disappeared under the water. A second one dipped down likewise, as if it were also struck, but it suddenly righted itself and was able to escape. The third aeroplane hit dropped slowly near the coast. Sailors were about to tow it to shore, when the weight of its motor caused it to sink, but there is hope that it may be recovered. During the height of the battle a submarine had gone out to sea and engaged in combat with an aeroplane, which repeatedly tried, by swooping down, to drop explosives on the vessel, but all its bombs missed the target and exploded in the water. A second aeroplane then came and made a similar attack on the submarine. This also failed, and one of these assailants was hit, either by a shell from a coast battery or from the submarine, and sank.

"Italian aeroplanes meanwhile did valiant work, keeping the enemy squadron away from the town and rounding them up as a mark to the coast batteries. When last seen the Italian aeroplanes were in full chase after the two remaining Austrian machines, which were all that were left out of the original air squadron of five. When, at half-past four, the battle was over and the inhabitants emerged from their houses, there was great rejoicing on its being learned that three enemy machines had been brought down. An immense crowd went out to the part of the shore where a captured aeroplane had been hauled, and in the evening the aerial victory was celebrated all over the town. There was nothing but praise for the gunners of the coast batteries, the armed motors, and the plucky aviators, who have proved to the Austrians that Ancona can no longer be attacked with impunity. All day yesterday there was a constant procession of crowds to the spot on the shore where an enemy aeroplane was lying with its big broken wings."

Mr. James Dunn, writing to the *Daily Mail* from Rotterdam on April 6th, says :—

"The Allied air raids on munition depôts have been so effective that the Germans now store shells in railway wagons in sidings at intervals of 300 or 400 feet."

Information received in Paris shows great aerial activity in the Balkans on the part of the Germans, whose aeroplanes are flying over the British and French lines to carry out reconnaissances.

An Exchange message from Athens on April 5th says :—

"It is learned from Mitylene that Allied aeroplanes yesterday bombarded the encampments at Smyrna and Vourla and also the

Kastraki Fort, in the Gulf of Smyrna, inflicting serious damage. The aeroplanes returned in safety to their base."

A message from the same source on the following day states :—

"A German aeroplane was hit by Allied batteries and brought down to the north of Karasuli."

Reuter's correspondent at Salonica on April 7th, reports :—

"A Taube dropped several bombs south of Kukush without result."

The *Journal's* correspondent at Epinal states that on April 10th disguised German aeroplanes flew over Epinal, dropping several bombs on the town, which caused rather heavy material damage, but resulted in no casualties.

The following appeared in the *Daily Mail* on Monday :—

"Graphic details of the manner in which the Fokker 'star,' Lieutenant Immelmann, attacks his adversaries have reached England in a letter from Lieutenant R. J. Slade, an observer of the Royal Flying Corps, now a prisoner of war at Fürstenberg.

"Lieutenant Slade and his pilot, Captain Darley, R.F.C., were flying over the German lines in a French machine when suddenly Immelmann 'came up behind us,' says Lieutenant Slade, 'and opened fire with his machine gun before we were aware of his presence.' The first stream of lead riddled the petrol tank. Captain Darley tried to escape the bullets by 'shoving her nose down,' but Immelmann followed, hardly once getting off his target. Fortunately, the Englishmen's machine did not catch fire with the escaping petrol, but Captain Darley was shot through the right arm, the thumb of his left hand was pounded to a jelly, and there, in mid-air, Lieutenant Slade had to lean over and amputate it with his penknife.

"All this time Immelmann was maintaining a steady fire. Lieutenant Slade's clothing was riddled with bullets, but he escaped injury. The pilot was struck again in the left hand, but with his right he held control of the machine and brought it safely to earth, performing 'a stunt landing.' Immelmann, who, when it was obvious that the British plane could not escape, had apparently drawn off, seeing that the Englishmen were alive, planed down and alighted to give them what assistance he could. He behaved in such a kindly manner when once his work was done that Lieutenant Slade writes, 'He is a gentleman, and if we ever capture him I hope he will be treated as such.'"

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PERSONALS.

UNDER the above heading will be published weekly particulars of a personal character relating to those who have fallen or have been wounded in the country's service, announcements of marriages and other items concerning members of the Flying Services and others well known in the world of aviation. We shall be pleased to receive for publication properly authenticated particulars suitable for this column.

Casualties.

Captain WALTER GERARD PALMER, Infantry, Indian Army, attached R.F.C., who was killed on March 5th, aged 32 years, was the second son of the late C. E. Palmer and Mrs. Palmer, of Instow. He obtained his first commission in January, 1903, and was gazetted to the Indian Army in the following year. He was promoted captain in January, 1912.

Lieutenant DENIS PERCIVAL BEAUCHAMP TAYLOR, Hussars and R.F.C., previously reported missing, is now reported to have been killed on March 14th. The only son of Colonel P. B. Taylor, late R.H.A., he was born in 1894 and obtained his first appointment in September, 1913. In November, 1914, he was promoted Temporary Lieutenant. He was awarded the Military Cross.

Second Lieutenant G. J. L. WELSFORD, Middlesex Regiment, R.F.C., reported missing on March 31st, is now stated to have fallen in action. Unofficial information has been received that he was shot dead during a reconnaissance over the enemy lines on March 30th, and that his brother officer and school friend, Lieutenant Wayland-Joyce, R.F.C., is an unwounded prisoner. Lieutenant Welsford was 20 years of age, and was the only son of the late Mr. J. W. W. Welsford, assistant master in Harrow School and Fellow of Caius College, Cambridge, and of Mrs. E. W. Freeborn, and stepson of Major E. W. Freeborn, of Harrow. Educated at Orley Farm School, Harrow, Marlborough College, Berlin-Lichterselde West, and Caius College, Cambridge, he read law at Caius with a view to becoming a barrister. On the outbreak of war he had been at Cambridge one year. He immediately got a nomination for Sandhurst, where he spent four months. On passing out he joined the Middlesex Regiment, and was wounded in the Second Battle of Ypres. During his convalescence he learnt to fly at Hendon, and obtained the Royal Aero Club's certificate. He returned to the front for three weeks, and was then recalled to be transferred to the Royal Flying Corps, and to be trained at Farnborough and Upavon. Lieutenant Welsford was appointed pilot, and went on active service again on February 24th.

Second Lieut. GEOFFREY WYNNE BAVIN, who was killed while flying at Salisbury Plain, was the third son of Captain J. T. Bavin, the 12th Queen's, and Mrs. Bavin, of Berkhamsted, Herts. The officer, whose father and two elder brothers have been serving since 1914, was born in 1897, and was educated at Westminster Abbey choir school, Berkhamsted School, and at Sandhurst. Leaving the R.M.C. in October, he obtained his pilot's certificate in November, and his "wings" early in February. His commandant says of him : "He was an extraordinarily fine pilot, and had he lived would undoubtedly have been in the front rank of airmen. On the day of his death he was about to take up a position in the experimental squadron, where his fine flying would make him very useful. He was a clean, straight boy, and is a great loss, not only to his family, but to the Service." His two elder brothers are in France.

Lieutenant M. GIROD, of the Cheshire Regiment, who lost his life on March 19th (aged 23), was educated at Seaford College, Sussex, and in Switzerland. He was transferred to the R.F.C. on September 13th, 1914. He obtained his first wing, and was piloting for his second when his machine came to grief. He was the son of Mr. Ernest Girod, for 30 years consulting engineer to the Linotype Company.

Wounded and Prisoner of War.

Second Lieut. F. N. GRIMWADE, R.F.C., was, on April 4th, officially reported missing from his base in France as from the 1st inst. On April 8th his father, Mr. E. Norton Grimwade, of Melbourne, received from his commanding officer the following translation of a message dropped by a German aeroplane in our lines :—"4.4.16. To the Royal Flying Corps, Bailleul. Mr. Grimwade and Mr. Frost have fallen wounded into honourable imprisonment. Mr. Frost has a flesh wound in the thigh, Mr. Grimwade a wound in the thigh bone (both bullet wounds). Under the circumstances both are doing well, and wish to be remembered to their comrades and relatives." They also dropped a few pencilled lines from my wounded son that he was "getting along well and being kindly treated."

Married and to be Married.

Captain CHISHOLM WILFRED ANSTEY, S. Wales Bord. and R.F.C., was, on April 4th, married, at the Parish Church, Rye, to DOROTHY ETHEL, eldest daughter of Major H. R. WESTMACOTT, The Welch Regt., and Mrs. Westmacott, Belvedere Cottage, Rye, Sussex.

Lieutenant J. O. ARCHER, Royal Field Artillery and R.F.C., only son of the late John Archer and of Mrs. Archer, late of Colchester, was married on April 10th, at St. Mary Abbot's, Kensington, to ESTHER, eldest daughter of CHARLES STUART CHILTON, and Mrs. Chilton, Sidmouth, South Devon.

Lieutenant ERNEST AYSCOGHE FLOYER, I.A.R. and R.F.C., eldest son of the late Ernest Ayscoghe Floyer, of Cairo, Egypt, and Mary Cornish, and stepson of Vaughan Cornish, D.Sc., of Woodville, Camberley, was married on April 8th, at St. Paul's, Frimley, to LENA CECILE, elder daughter of HENRY and the late PAULINE VOST, of Allahabad, India.

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FOR THE CAUSE OF HUMANITY.

THERE'S just a couple foot span
Of dope and strut and wood,
Enough to delight the heart of a man
With a craving for livelihood.

There's an engine that races mad,
And there's space at a premium.
There's risk in plenty to be had,
Honour and glory to be won.

Asking but little, giving all,
To climb aloft midst cloud and mist,
Beneath the roof of heaven to crawl,
To break a lance at this new list.

Then time will come when death gains sway,
The span is up, the flying done.
Another hero goes his way,
Past bugle's call or roll of drum.—"AN AIR PILOT."

FLIGHT

MR. BILLING'S CAMPAIGN.

In connection with his campaign for a strong air service Mr. Pemberton-Billing, M.P., spoke at three meetings during the week-end.

At Newcastle on Saturday he said that if the air service of the country was removed from the control of politicians and those who did not understand it, it would be possible in six months for us to regain and maintain supremacy in the air. Until the job was finished he would associate with no party inside or outside the House, but work quite alone.

If the war continued for another twelve months he believed it would be determined in the air. Whatever arms presented themselves to our hands it was time we employed them. If reprisals were necessary in the interests of the country let us have them. He read in the word reprisals the killing of every man who was trying to compass the downfall of this country.

He was confident that in the next twenty years the aeroplane would bring about universal peace.

Speaking at Sunderland on Sunday Mr. Billing said the future mastery of the air was far more important to this country even than the command of the sea, and it was going to be more difficult and expensive. Within a few years he expected to see machines with speeds between 200 and 300 m.p.h., meaning that England and Germany would be separated by an hour's air journey, and we must prepare. By awakening us Count Zeppelin had really laid the foundation-stone of Britain's supremacy. If we did not possess it at the end of the war we never should, and we owed it to the Empire to obtain it now.

Mr. Billing thought that the "blackening out" of the countryside as a precaution against Zeppelins was sound. The mere shutting down of light was foolish. There should be either normal lighting or total darkness. The latter had its disadvantages, but we should have to put up with it until the Government carried the air war into the enemy's country.

At Middlesbrough on Monday night Mr. Billing pointed out that although geographically this country was an island still, in regard to the air every inland town and village lay on the shore of the ocean of the air. We might be able to determine the war to a great extent by a strong air service, but in ten years' time a weak air service might mean that in a night we might cease to exist as a nation.

With regard to the Joint Air Committee, he had given it six weeks to quarrel, seven to fight, and eight to break up. Six weeks had passed, and both chairman and assistant chairman had resigned. They had resigned because they had found that they could not listen to the incessant squabbling of the two services. He wanted to know what the Army or Navy had to do with the air at all. The air was a new element, and demanded a new service. The Air Service had been the Cinderella of the Army and the Navy. Neither had understood it; neither wanted it; but they did not want the other one to have it. Service bitterness had produced inefficiency.



German Seaplane Captured.

The *Petit Parisien* announces that a French destroyer last week brought in to Dunkirk a German seaplane, which was found in the North Sea with a broken wing. The two occupants were taken prisoners.

A Fatal Accident.

An inquest was held at a north country village on Lieut. John Nichol, Royal Scots Fusiliers and R.F.C., who was killed while starting off on a reconnaissance on April 5th. A verdict of "Accidental Death" was returned.

Claims for the Zeppelin Prizes.

It is understood that four claims have been sent in for the prize of £500 offered by Sir Charles Cheers Wakefield, Lord Mayor of London, to the first aviator or gun's crew to bring down a Zeppelin. They have been referred to the authorities for investigation and adjudication.

Other rewards which await claimants are the £1,000 offered by Mr. Joseph Cowen, of Stella Hall, near Newcastle, to the crew of the first aircraft to bring down a German Zeppelin in the British Isles or British territorial waters, and £500 added to Mr. Cowen's offer by Mr. L. A. Oldfield, of Wilton Street, London, S.W.

More Aeroplanes from the Gold Coast.

The Secretary of State for the Colonies announces that £1,500 has been subscribed by the chiefs and people of Eastern Krobo, Gold Coast, and a further sum of £1,500 by the Head Chief, chiefs and people of the New Juaben Settlement, Gold Coast, for the purchase of two aeroplanes for presentation to the Royal Flying Corps through the Overseas Aircraft Fund.

This is the seventh aeroplane to be presented by the people of the Gold Coast and its dependencies.

And More Aeroplanes from Malaya.

In addition to over £15,000 previously subscribed, £10,500 has been collected in the Straits Settlements and the Federated Malay States for the purchase of a further six aeroplanes, which will be numbered "Malaya 11" to "Malaya 16," for the use of the Royal Flying Corps. Mr. C. Alma Baker, of Kinta, the organiser of the fund, who has already given one aeroplane, is presenting a second aeroplane.

The Australian Flying Corps.

It has been decided that qualified pilots in the Australian Flying Corps and the Australian Flying Corps Reserve are to wear on the left breast a badge, consisting of outspread wings, with the letters "A.M.F." surmounted by a crown. Observers who qualify at any course at the Flying School subsequent to January 1st of this year, and are in possession of a certificate, will wear a badge, consisting of outspread wings, with the letter "O," without the crown.

Funerals by Aeroplane.

Advantage has been taken of the aeroplane for doing all sorts of journeys expeditiously, and according to the *Daily Telegraph's* correspondent at New York, at the dinner of the Aeronautical Society of America recently, the head of one of the largest undertaking concerns there announced that he was preparing to conduct funerals by aeroplane in the near future. "To be in style," he said, "one must make arrangements to have mortal remains carried on a swift sombre-hued biplane to the final resting-place." He declared that the roof of his establishment would soon be fitted with a landing-stage for aircraft, and "all conveniences for mourners."

A Vickers Move.

On and after the 17th instant the address of the Aviation Department of Vickers Ltd. will be as follows:—Vickers Ltd., Aviation Department, Imperial Court, Basil Street, Knightsbridge, S.W., where all communications should be addressed.

"Learning to Fly."

Under this title the Grahame-White Aviation Co. have published a little book which is full of useful information to those who are thinking of qualifying as an aeroplane pilot. Not only does it give details of the Grahame-White School and the facilities which are offered both for air-work and for experience in the works, but it also sets out very clearly an outline of the actual business of learning to fly, the whole being made clear to the lay mind by a series of excellent photographs. A copy will be sent to any reader who applies to the Grahame-White offices at 32, Regent Street, Piccadilly Circus, W.

A Rotax Move.

Having completed their arrangements, the Rotax Motor Accessories Co. have now transferred their offices and warehouse to their new establishment, and all communications and goods should in future be addressed to them at Rotax Works, Willesden Junction, London, N.W. The 'phone number is 2480 Willesden, and the address for wires, Rodynalite, Phone, London.

For Safety Belts and Leather Goods.

Those who require leather work of any description should make a note of the address of Messrs. C. H. Holmes and Son, of 38, Albert Street, Manchester, who for some time past have been utilising their long experience—they were established in 1885—in connection with aviation. One of their specialities is the making of safety belts, either to R.A.F. or any other pattern, and as to the quality of their work it is sufficient to say that they are contractors to the Government. They are also makers of Travelling Bags, Uniform Cases, Trunks, Despatch Cases, Instrument Cases, and all classes of officers' accoutrements.

The Blériot Manufacturing Aircraft Co., Ltd.

At the statutory first meetings of the creditors and shareholders of the Blériot Manufacturing Aircraft Co., Ltd., on April 7th, Mr. H. E. Burgess, Official Receiver, reported that the assets comprised cash in hand of bankers, £41,440; investments in War Loan, £29,100; Deperdussin stock, £100; furniture, £669; a debt of £14,241 claimed from the Army and Navy Contract Corporation, and unpaid calls, £5,157, making a total of £90,721. The liabilities only amounted to about £4,000 or £4,500; consequently the creditors would be paid in full and the balance would be available for distribution among the shareholders.

It was unanimously decided that the liquidation should be left in the hands of the Official Receiver. As soon as practically possible the bulk of the assets will be returned to the shareholders by way of a first dividend.

"WAR PAINT."

APART from the fact that it gives full details and prices of the clothing for officers on active service, which is a speciality of Messrs. Robinson and Cleaver, the little booklet "War Paint," published by the firm, has an interesting chapter on "Campaigning Hints," written by an expert on *Land and Water*. We reproduce

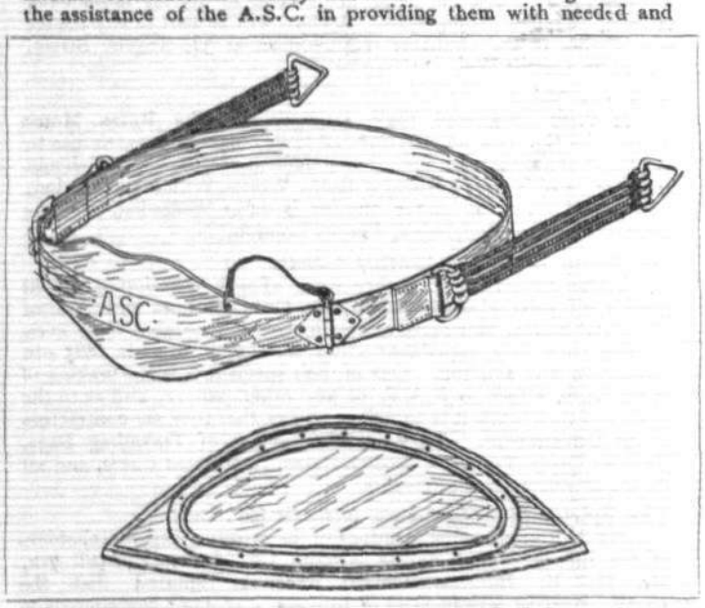


A couple of sketches reduced from "War Paint."

herewith two little sketches which illustrate two of the outfits which are specially made for flying officers, and it may be mentioned that the staff of Robinson and Cleaver have given a great deal of attention to making their garments wind and weather proof, two important considerations where airwork is concerned. Copies of the booklet can be obtained from 156, Regent Street, London, W.

THE A.S.C. SPECIALITIES.

IT is now over six months since Mr. Geo. H. Mansfield started business as the Aircraft Supplies Company at 17, John Street, Theobald's Road, W.C., and during that time this concern has justified its claim to be the "Universal Providers" of the world of aircraft construction. Many firms have cause to be grateful for the assistance of the A.S.C. in providing them with needed and



The safety belt, and, below, windscreen for B.E.2c machines offered by the Aircraft Supplies Co.

hard-to-get fittings, and on more than one occasion prompt supply of some particular article has prevented the holding up of important deliveries. Although the A.S.C. are in a position to undertake to supply almost any fitting or accessory connected with aircraft, from a split-pin upwards, there are several lines in which they specialise, amongst which may be mentioned their own design of safety-belt; pilot and passenger seats to R.A.F. drawings, and British made magnetos and spare parts. As regards the last mentioned a special separate branch has been organised for the purpose, thus ensuring full and expert attention being given to all enquiries.

As will be seen from the accompanying sketch, the A.S.C. safety belt has a single release—a split-pin that is easily inserted and withdrawn. Another feature of the A.S.C. consists of the lists they issue periodically, giving particulars of various fittings they have for disposal from time to time. The April list to hand is divided into three sections:—A, parts for R.A.F. designed aircraft; B, supplies for engine builders, air stations and aerodromes; C, parts for aircraft of private design. Quotations will be given for any metal fitting on receipt of drawing, and also for machining engine parts.

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IMPORTS AND EXPORTS, 1915-1916.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures, see "FLIGHT" for January 25th, 1912; for 1912 and 1913, see "FLIGHT" for January 17th, 1914; for 1914, see "FLIGHT" for January 15th, 1915; and for 1915, see "FLIGHT" for January 13th, 1916:—

	Imports.		Exports.		Re-Exportation.	
	1915.	1916.	1915.	1916.	1915.	1916.
	£	£	£	£	£	£
January ...	20,382	1,509	435	6,399	13,706	—
February	380	6,444	138	30,693	18,823	—
March ...	280	3,388	7,218	17,872	5,090	7
	21,042	11,341	7,791	54,964	37,619	7

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NEW COMPANIES REGISTERED.

Association of British Motor and Aircraft Manufacturers, Ld., 173, Fleet Street, E.C.—A company limited by guarantee, with 100 members, each liable for £1 in the event of winding up. Objects, to protect the British motor and aircraft industry (which expression includes companies, firms and persons carrying on within the U.K., Channel Islands, India, or in any Colony, Dependency, or Possession of Great Britain). The subscribers are: E. Manville (Chairman, Daimler Co., Ld.), F. R. Simms (Chairman, Simms Motor Units, Ld.), F. W. Shorland (Managing Director, Clement Talbot, Ld.), J. M. Young (Secretary, John I. Thornycroft and Co., Ld.), R. Dennis (Managing Director, Dennis Bros. (1913), Ld.), H. T. Vane (Managing Director, D. Napier and Sons, Ld.), A. Spurrier (Director, Leyland Motors (1914), Ld.), H. Johnson (London Manager, Joseph Lucas, Ld., Birmingham), S. Straker (Managing Director, Straker-Squire (1913), Ld.), H. C. B. Underdown (Chairman, Commercial Cars, Ld.), G. Young (Director, Albion Motor Car Co., Ld.), F. Boyle Monkman (London Manager, Halley's Industrial Motors, Ld.). The management is vested in an Executive Committee, the first members of which are E. Manville and A. Spurrier. Only persons engaged in the British motor and aircraft industry are eligible for membership of the Committee. Secretary, H. Wyatt.

Conner Magneto and Ignition, Ltd., Midland Bank Chambers, 71A, Queen Victoria Street, E.C.—Capital £52,000, in 50,000 pref. shares of £1 each and 40,000 ordinary shares of 1s. each. Proprietors and manufacturers of and dealers in aeroplanes, motors, &c. First directors, H. Hirst, J. Fraser, and M. S. Conner.

FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C.

Telegraphic address: Truditur, London. Telephone: 1828 Gerrard.

SUBSCRIPTION RATES.

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UNITED KINGDOM.	s.	d.	ABROAD.	s.	d.
3 Months, Post Free...	1	8	3 Months, Post Free...	2	9
6 ,, ,, ...	3	3	6 ,, ,, ...	5	6
12 ,, ,, ...	6	6	12 ,, ,, ...	11	0

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 44, St. Martin's Lane, W.C., *and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.*

SPECIAL NOTICE.

EASTER HOLIDAYS.—Owing to the fact that Good Friday falls in next week, it is necessary for the next issue of FLIGHT to close for press on Monday, April 17th. All copy, Editorial or Advertisement, must therefore be at the Office, 44, St. Martin's Lane, not later than first post on Monday morning.